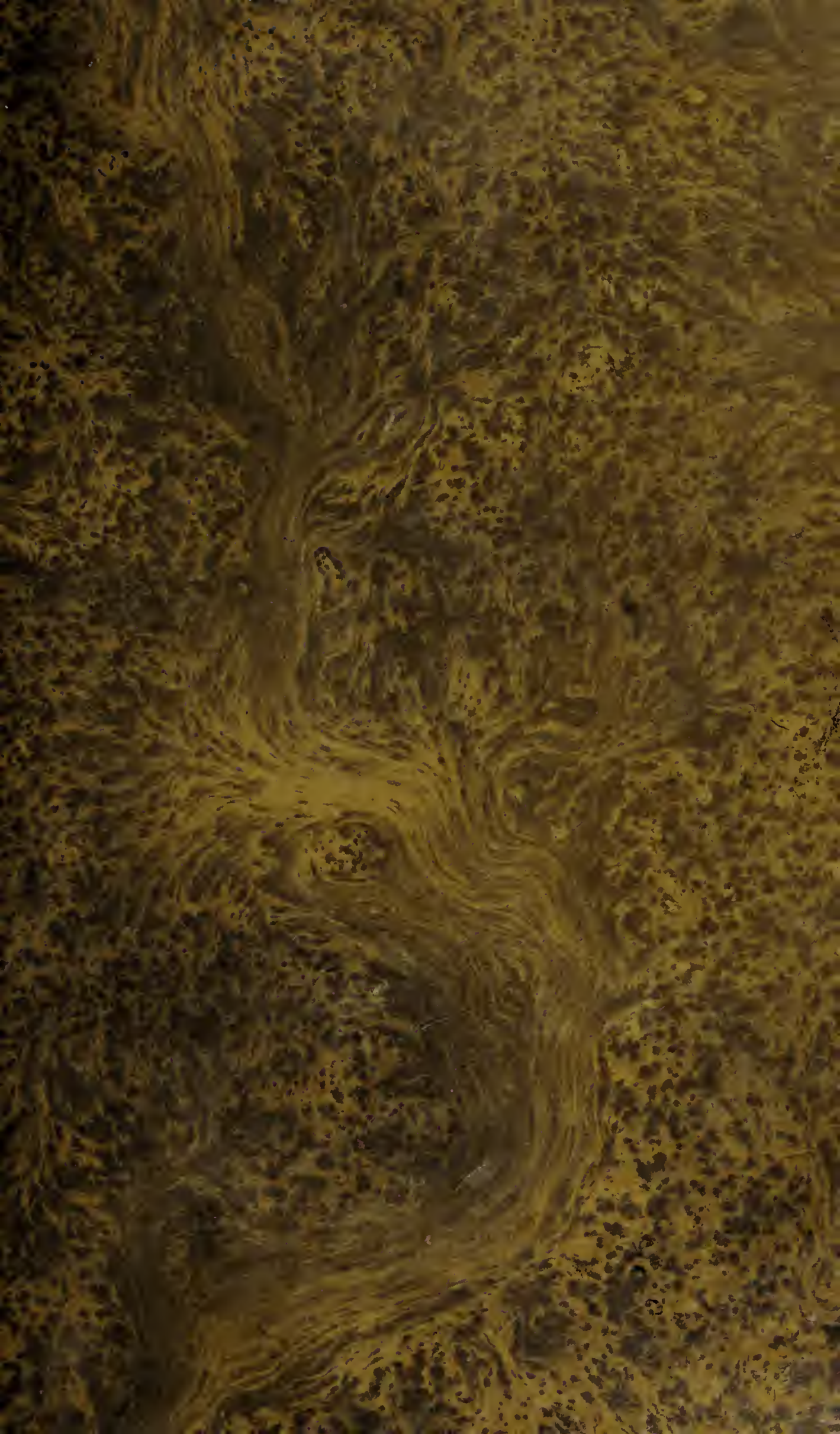

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THE

RURAL ECONOMY

OF

NORFOLK:

COMPRISING THE

Management of Landed Eſtates,

AND THE

PRESENT PRACTICE of HUSBANDRY

IN THAT COUNTY.

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RESIDENT upwards of Two Years in NORFOLK.

IN TWO VOLUMES.

VOL. I.

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ADDRESS

TO THE

PUBLIC.

THE utility of full and faithful Regiſters of the preſent practice of Huſbandry, in well-cultivated Diſtricts, occurred to me about ten years ago;—when, in a journey of four or five hundred miles through the central parts of the Iſland, I experienced the inutility of a *tranſient view*; but, at the ſame time, clearly ſaw the advantages which would accrue from a TWELVE-MONTHS-RESIDENCE in the immediate Diſtrict of the practice to be regiſtered. At that time, however, I was too buſily employed in regiſtering my own practice * to think of extend-

* See MINUTES OF AGRICULTURE, in SURREY.

ing my Regiſter, in any way, to the practice of others.—But being fortunately releaſed from my connexion in Surrey, and having prepared for publication my EXPERIMENTS *and* OBSERVATIONS *concerning* AGRICULTURE *and the* WEATHER, I found leiſure to reflect more maturely on the means of perfecting the ſyſtem, which I had, with much deliberation, ſketched out, and which I had in part filled up, from my own practice.

In February 1780, I ſubmitted to the Society of Arts in London, as the firſt Society, profeſſedly Agricultural, in the kingdom, the following Plan.

PLAN

PLAN

FOR PROMOTING

AGRICULTURE.

THE knowledge of Agriculture either reſults from experience, ſimply; or is acquired through the united efforts of experience and theory.

Theory may facilitate, by analyzing the ſubject, and giving a comprehenſive view of the ſcience in general;—elucidate, by commenting on the experience already acquired;—accelerate, by propoſing fit ſubjects for future inveſtigations;—but cannot convey any certain information without the aid and concurrence of experience.

The experience of Agriculture is acquired through adequate obſervation, either on ſelf-practice, or on the practice of others.

The practice of an individual, however, is generally limited to ſome parti-

cular branch of management, on ſome certain ſoil and ſituation; and a general knowledge of Agriculture muſt not be expected from the practice of any one man.

A man, nevertheleſs, who has ſpent a long life in the practice of ſome certain department, muſt neceſſarily have acquired a conſiderable ſhare of knowledge of that particular department: and it is probable, that were the knowledge of the individuals who excel in the ſeveral departments of huſbandry, —were the knowledge of the ableſt farmers in the beſt-cultivated parts of the iſland collected,——Engliſh Agriculture would be found, at this day, to be far advanced towards perfection.

But the individuals who excel in agriculture, are unknown to each other; and, if aſſociated, could not probably communicate their knowledge, with any degree of preciſion: for their art being the reſult of habit, it is too familiar to be minutely deſcribed. Their

farms

farms are the only records in which it is regiſtered, and even there it is as fleeting as the hour in which it is performed. Nothing but actual obſervation, and immediately regiſtering in writing the ſeveral operations, as they paſs throughout the year, can render the practice of individuals of extenſive ſervice to the Public.

In ſhort, the art of agriculture muſt ever remain imperfect while it is ſuffered to languiſh in the memory, and die with the practitioner: RECORD, only, can perpetuate the art; and SYSTEM, alone, render the ſcience comprehenſive *.

Mr. Marſhall has already ſubmitted to the Public a regiſter of his own practice during five years; comprehending a plan for acquiring agricultural knowledge, ſyſtematically, from

* What Dr. Johnſon ſays of Language is applicable to Agriculture—"Diction merely vocal is always "in its childhood. As no man leaves his eloquence "behind him, the new generations have all to learn." —*Journey to the Weſtern Iſlands of Scotland.*

ſelf-practice †; which plan is equally applicable to the practice of others; provided the obſervations be performed without remiſſion, and by one who is accuſtomed to agricultural obſervation. He has alſo endeavoured to trace out the foundation of a ſyſtem, ſo far as his own practice has extended.

HIS PRESENT PLAN is, to extend his obſervations to the practice of others; more eſpecially as it appertains to the breeding, rearing, and fatting of cattle —to the dairy management,—to the management of ſheep,—to the draining and watering of meadows,—and to the graſs-land, or ley-management in general. After he is become proficient in theſe departments, his intentions are to extend his SURVEY OF PROVINCIAL AGRICULTURE to the arable or plow-management.

His intended mode of obſervation is this: Having pitched upon the branch of management to be ſtudied, and the

† See Experiments and Obſervations, as above.

diſtrict

diſtrict which excels in the practice of that particular branch, he propoſes to fix his place of reſidence, during TWELVE MONTHS, in a farm-houſe;—if poſſible, in the houſe of the beſt-informed farmer in the diſtrict pitched upon; and there, with daily attention, minutely obſerve and regiſter the living practice which ſurrounds him: not the practice of theoretical, but of profeſſional farmers; or rather the provincial practice of the diſtrict, county, or country obſerved; nevertheleſs attending to improvements and excellencies, by whomſoever practiſed.

Nor is his plan confined merely to obſervation: he means to acquire by ſelf-practice a competent knowledge of the MANUAL OPERATIONS incident to the department of huſbandry which is the immediate object of his ſtudy; as alſo to collect ſuch IMPLEMENTS and UTENSILS as may appear peculiarly adapted to the purpoſes for which they are ſeverally intended; not ſketches nor models,

models, but the inſtruments themſelves which he has ſeen in common uſe; and of whoſe uſes he has acquired, by manual practice, an adequate knowledge.

In order to furniſh himſelf with every advantage which may forward his general deſign, his further intentions are to employ his leiſure in taking a complete REVIEW OF WRITTEN AGRICULTURE, from Fitz-Herbert, in 1534, to the preſent time (excepting the works of ſuch authors as may be living at the time of cloſing the Review); and, after his judgement has been matured by a ſurvey of provincial practice, to compreſs into as narrow a compaſs as may be, the uſeful information relative to Britiſh Agriculture, which has been already recorded; whether it appears in incidents and experiments ſufficiently authenticated, or in hints which may furniſh ſubjects for future experiment.

Briefly,—his plan is, reciprocally to receive and to offer information;—to com-

communicate provincial practice to the Public at large;——to collect and compress the useful information which is at present widely scattered in almost numberless volumes;—and to reduce these joint accumulations of agricultural knowledge to systematic science: consequently, to offer to the present and succeeding generations a comprehensive SYSTEM OF ENGLISH AGRICULTURE, as it now stands;——and to raise it on a basis so ample and scientific, as that future acquisitions may be added to it from time to time.

ON

ON THE EIGHTH of the ſucceeding month the SOCIETY were pleaſed to paſs the following Reſolutions:

"RESOLVED,

"THAT the collecting a general know-
" ledge of the Agriculture of the king-
" dom, as propoſed by Mr. Marſhall,
" may be highly uſeful.

"RESOLVED,

"THAT as it is not the practice of the
" Society to adopt the execution of plans
" of this kind, the Society cannot engage
" in the undertaking.

"RESOLVED,

"THAT Mr. Marſhall have liberty to
" conſult the Books of Agriculture in the
" poſſeſſion of the Society, and to inſpect
" the ſeveral Machines and Models in
" their repoſitories."

THESE

THESE RESOLUTIONS, though they afforded no real aſſiſtance, ſerved to eſtabliſh the uſefulneſs of the plan. The means of carrying it into execution remained now the only object of conſideration. An application to PARLIAMENT was thought of, and ſtrongly recommended; but at a time when public economy had become a neceſſary and prevailing principle, and when the immediate preſervation of the ſtate called for every hour of parliamentary deliberation, it would have been highly improper to have attempted to draw off the attention of Parliament to any other object, however uſeful.

But being thus embarked, it was thought adviſeable to proceed ſo far, at leaſt, as to make the Plan *known* to thoſe whom it particularly concerns;—and it was accordingly communicated to ſeveral of the principal Nobility, and to ſome few Gentlemen of landed Property. Its reception, however, was not ſuch as I conſidered it to be intitled to; and in this ſpecimen there were ſufficient grounds to convince me of what might be expected from INDIVIDUALS.

I have

I therefore folded my Plan;—with, however, a degree of *reluctance*;—becauſe I was confident that, were it carried into execution, it would be productive of much public good;—but without any ſhare of *regret*;—becauſe I had fully diſcharged my duty to my COUNTRY, to my *profeſſion*, and to *myſelf*.

In Auguſt 1780, I went down into Norfolk, as agent to Sir Harbord Harbord's eſtate;—one of the firſt in that county.

The management of *Eſtates*, though a ſiſter-art to Agriculture, or the management of *Farms*, was in a manner new to me; and, though intimately connected with my Plan, had never ſtruck me, as being, what it really is, an inſeparable department of RURAL ECONOMY. Eſtate-Agency, it is true, has always been treated of by writers as a diſtinct ſubject; but it has generally been found proper to explain, in the ſame book, the leading branches of Agriculture; for, beyond diſpute, the management of an Eſtate cannot be conducted

ducted with propriety by any man unacquainted with the management of a Farm.

Norfolk is not more celebrated for its ſyſtem of huſbandry, than for a ſuperior knowledge in the management of landed Eſtates, which is there reduced to a regular buſineſs.

I was ſingularly fortunate in my ſituation: I had not only an opportunity of ſeeing the effects of improper management committed by thoſe who had gone before me; but of profiting by my own experience (thereby much extended) in endeavouring to do away the evil effects.

With reſpect to huſbandry, too, I had every advantage: I had an opportunity of employing my leiſure in actual practice, on a large ſcale: the Agency, of courſe, afforded me an extent of country to range over, and make my obſervations upon, at will: and, I am happy in being able to add, a number of ſenſible men,—ſome of them at the head of their profeſſion,—were always ready to give me,

without

without reſerve, every information I aſked for.

Thus,—in a manner totally unforeſeen,—I became poſſeſſed of an opportunity, not only of extending my plan to an important purpoſe I had not thought of, but of executing the part I had propoſed, in a manner which the whole landed Intereſt could not, without an agency, have enabled me to have done.

I therefore embraced every opportunity of regiſtering the uſeful ideas which occurred, whether in huſbandry, or in eſtate-agency: but (I think proper to mention in this place) without any view *at that time*, of carrying the whole of my plan into execution. At length, however, finding, that I could no longer conduct the eſtate,—in a manner, which, to my own mind, appeared to be right;—I loſt no time in finiſhing a Regiſter of the Rural Economy of the county;] and, in November 1782, I left Norfolk.

Having thought it neceſſary to ſay this much, in explanation of the following work,

work, it would be a want of gratitude not to add, that, how greatly ſoever Sir Harbord Harbord and myſelf might differ upon matters of *Buſineſs*, I flatter myſelf I ſhall always retain a proper ſenſe of the perſonal civilities I had the honor of receiving, during my reſidence at GUNTON.

Before I cloſe this Addreſs, it may be proper to inform the Public, that it is my intention, at preſent, to finiſh the propoſed Plan, upon an enlarged baſis; having now extended it, not only to the MANAGEMENT OF LANDED ESTATES, but to PLANTING; an art upon which, ſome time ago, I digeſted my ideas, and in which I have, ſince, had an opportunity of extending my practice: thus, purpoſing to reſtore to their natural union the THREE BRANCHES of RURAL ECONOMICS,

London, 1ſt Feb. 1787.

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Neele sculpt. 352, Strand.

THE RURAL ECONOMY OF NORFOLK.

I.

THE DISTRICT.

THE COUNTY, conſidered as a ſubject of RURAL ECONOMY, is aptly diviſible into EAST, WEST, and SOUTH-NORFOLK.

THE SOUTHERN Hundreds partake of the Suffolk practice; and, though well cultivated, do not exhibit, in its purity, the NORFOLK SYSTEM OF HUSBANDRY.

THE WESTERN diviſion is either marſhy, low land, applied chiefly to the dairy, after the manner of Cambridgeſhire; or open ſheep-walks and extenſive heaths, whoſe ſtock are

ſheep and rabbits; or newly-incloſed country (chiefly of the laſt deſcription), in which no general plan of management has yet taken place.

In East-Norfolk, alone, we are to look for that regular and long-eſtabliſhed ſyſtem of practice which has raiſed, deſervedly, the name of Norfolk huſbandmen; and which, in a principal part of *this* Diſtrict, remains unadulterated to the preſent time *.

The climature of Eaſt-Norfolk is cooler than that of other Diſtricts, in this Iſland, ſituated on the ſame degree of latitude; namely, fifty-three degrees. The ſeaſons, here, are from a week to ten days later than they are in the neighbourhood of the metropolis.

* The largeſt fortunes have been made by farmers in Weſt-Norfolk: not, however, by any ſuperior ſyſtem of management practiſed in that diviſion of the county; but through extenſive tracts of ſheep-walks, and other *freſh ground*, held by individuals, having been *incloſed*, *marled*, *broken up*, and ſubjected to the *management of Eaſt-Norfolk*; where, farms being comparatively ſmall, and having been incloſed, marled, and plowed, time immemorial, there was not *room* to make a Mallet,—a Dursgate,—or a Martin. Viewing the ſtate of huſbandry in Weſt-Norfolk, collectively, it is much beneath that of the Diſtrict here deſcribed.

THE SURFACE of this Diſtrict, though the ſoil be dry, is an almoſt uniform flat; except a border toward the ſea-coaſt, which is broken, and, in many places, bold and pictureſque; and, excepting the more ſouthern Hundreds, in which marſhes, fens, and lakes, provincially "BROADS," ſome of them of conſiderable extent, abound.

THE RIVERS of Eaſt-Norfolk are ſmall and few in number; but its RIVULETS are numerous;—interſecting its flatted ſurface in a ſingular and happy manner.

INLAND NAVIGATIONS. Notwithſtanding, however, the ſmallneſs of the rivers, the natural flatneſs of the country renders them capable of being made navigable: the Yare furniſhes a RIVER NAVIGATION between Yarmouth and Norwich; as the Thyrn, called the North River, does from Yarmouth, through the Broads, to Dilham near North-Walſham; and out of this proceeds a CANAL NAVIGATION to Ayleſham.

THE ROADS, notwithſtanding King Charles was pleaſed to ſay the county of Norfolk was only fit to be cut out into roads for the reſt of his kingdom, are unpardonably bad;—

narrow, ſhaded, and *never mended*: they are numerous, however, eſpecially the bridle-roads; ſo that a traveller, on horſeback, has generally the choice of two or three ways, of nearly equal length, to the ſame place. Not a foot of turnpike-road in the Diſtrict; excepting the road between Norwich and Yarmouth.

THE INCLOSURES are, in general, ſmall, and the hedges high and full of trees. This has a ſingular effect in travelling through the country: the eye ſeems ever on the verge of a foreſt, which is, as it were by enchantment, continually changing into incloſures and hedge-rows. There is not, generally ſpeaking, a piece of wood-land or a coppice in the whole Diſtrict; and even plantations are thinly and partially ſcattered. A common or a heath (which not unfrequently occurs even in this part of Norfolk) is the only variety the face of the country affords. Some remnants of common-fields ſtill remain; but, in general, they are not larger than well-ſized incloſures. Upon the whole, Eaſt-Norfolk at large may be ſaid to be A VERY OLD-INCLOSED COUNTRY.

THE TOWNS of East-Norfolk are few. *Norwich*, *Yarmouth*, and *North-Walsham*, are its principal MARKETS. But the smaller PORTS of *Blakeney*, *Cromer*, and *Munsley*, are beneficial in assisting to draw off the produce of the District; especially that of the northern Hundreds.

For a particular description of the Fleg Hundred, see MIN. 106.

Of the eastern coast, see MIN. 112.

Of Blowfield Hundred and the Yarmouth Marshes, see MIN. 118.

2.

ESTATES.

FORMERLY, in this Diſtrict, were many ſmall Owners—Yeomen—provincially called "ſtateſmen," who cultivated their own eſtates. —There were inſtances of entire pariſhes being occupied by this reſpectable claſs of men. But, among other evil effects of that inordinate paſſion for farming, which prevailed ſome years ago, the decline of the independency of this country is a ſtriking one.

The yeomanry, heretofore independant and reſpected, ſeeing men, whom they had lately held as their inferiors, raiſed, by an exceſſive profit which had recently been made by farming, to a degree of affluence ſuperior to their own, and living in a ſtyle of extravagance their anceſtors had been ſtrangers to, became diſſatisfied with the homelineſs of their ſituation in life, and either launched out into extravagances ill ſuited to their income, or *voluntarily* ſold their comparatively ſmall

pa-

patrimonies, in order that they might, agreeably with the faſhion or frenzy of the day, become great farmers.

By this means many of thoſe comfortable places which were thickly ſcattered over Eaſt-Norfolk, have fallen into the hands of men of fortune; and are now become united with their large eſtates.

There are, nevertheleſs, ſome few ſmall owners ſtill remaining: but very few of the poſſeſſions, even of thoſe, are FREEHOLD; the COPYHOLD tenure being prevalent throughout the Diſtrict; which contains ſome very extenſive, and, even to this day, lucrative, MANORS.

3.

FARMS.

THE FARMS of East-Norfolk are principally *inclosed*; there being, as has been already obſerved, few common-fields at preſent in this Diſtrict; and theſe few are in general very ſmall; ten, twenty, or thirty acres; cut into patches and ſhreds of two or three acres, down to half an acre, or, perhaps, a rood each *.

But another ſpecies of intermixture, much more diſagreeable to the occupier, is here ſingularly prevalent. It is very common for an incloſure, lying, perhaps, in the centre of an otherwiſe entire farm, to be cut in two by a ſlip of glebe or other land lying in it; and ſtill more common for ſmall incloſures to be ſimilarly ſituated.

Theſe inconveniencies have, no doubt, ariſen from common-fields having been incloſed by

* The central parts of the Diſtrict are more particularly ſpoken of: towards the north coaſt, ſome pretty extenſive common-fields ſtill remain open; and ſome few in the ſouthern Hundreds.

piece-

piecemeal, without the general conſent of the proprietors. They are, however, inconveniencies which are every year decreaſing: many beneficial exchanges of intermixed lands have lately taken place, and many more equally advantageous remain yet to be made (ſee MIN. 4. on this ſubject).

But notwithſtanding theſe intermixtures and irregularities are ſtill too prevalent, and notwithſtanding ſcattered and "one-ſided" farms are ſingularly abundant, there are many compact ring-fence farms to be met with in the Diſtrict.

THE SIZES OF FARMS, at preſent, are of the middle caſt; few under fifty pounds, and fewer above three hundred pounds a year. Formerly they were much ſmaller; but the numerous little places of the yeomanry having fallen into the hands of men of fortune, and being now incorporated with their extended eſtates, are laid out into farms of ſuch ſizes, as beſt ſuit the intereſt, or the conveniency, of the preſent proprietors.

THE CHARACTERISTIC OF FARMS, in this Diſtrict, is, invariably, ARABLE UP-LAND;—with, generally, a ſmall proportion of moory graſs-

grafsland, called MEADOW. Many, however, of the fmaller farms, and fome of thofe of confiderable fize, have no grafsland whatever belonging to them. In this cafe MARSHES, or GRAZING-GROUNDS, at, perhaps, twenty or thirty miles diftance, are frequently hired by the occupiers of thefe farms.

But, viewing the Diftrict at large, the grafsland bears fo fmall a proportion to the arable, that its leading characteriftic is that of an ARABLE COUNTRY.

SOILS.

4.

SOILS.

A SINGULAR uniformity of ſoil prevails throughout this country: there is not, perhaps, an acre in it which does not come under the idea of a SANDY LOAM.

Its quality, however, varies widely, both as to texture and productiveneſs. The northern part of the Diſtrict abounds with barren heaths and unfertile incloſures; while the ſouthern Hundreds are principally covered with a richer, deeper, highly productive ſoil.

The ſoil, in general, however, may be termed ſhallow: perhaps ſix, perhaps five, inches may be taken as the medium depth.

Immediately under the cultivated ſoil, a hard cruſt—provincially "the PAN"—occurs univerſally; and under this ſubſtrata of various qualities, an unfathomable ocean of *ſand* may be conſidered as the prevailing ſubſtratum. In ſome places a hungry *gravel*, but more frequently an abſorbent *brick-earth*, is the immediate SUB-SOIL. *Marl* ſometimes

riſes

tiſes to near the ſurface, but ſeldom ſo high as the *pan*.

This ſeems to be univerſally conſidered as a diſtinct ſomething, poiſonous in its nature, and partaking neither of the ſoil nor the ſubſoil. It is not my intention to ridicule this received opinion; it may be well founded; but, to me, the pan appears to be a production not of nature, but of art; or, to ſpeak more accurately, a conſequence of the Norfolk culture carried on, time immemorial, with the Norfolk plow;—whoſe broad flat ſhare being held invariably in a horizontal poſition, and (unleſs in fallowing) invariably at the ſame depth, the ſurface of the ſubſoil becomes formed, by the action of the ſhare, the preſſure and ſliding of the heel of the plow, and the trampling of the horſe, into a firm even floor, upon which the ſoil is turned, and re-turned, in the ſame manner it would be, if ſpread on a floor of ſtone, or other material.

But be this as it may, and whether the pan be a natural or a factitious production,—it is a fact well eſtabliſhed, that breaking it up by plowing below the accuſtomed depth, is very injurious to ſucceeding crops.

Two

Two reaſons may be offered in explanation of this effect: the pan, year after year, and, perhaps, century after century, has been a receptacle of the ſeeds of weeds; which, by being trodden or otherwiſe preſſed into it, have remained there, locked up from the ſun and air, and, thereby, deprived of the power of vegetation. But no ſooner are theſe ſeeds releaſed from their confinement by being brought to the ſurface with the plow, than they vegetate in myriads to the annoyance of the crop.

The other reaſon is this:—the firm cloſe contexture of the pan renders it in a degree water-tight; it is, at leaſt, a check to the rain-water, which ſinks through the ſoil; prolonging its ſtay in the ſphere of vegetation. But the pan being broken, the filter is no more; and the rain, which is not immediately retained by the ſoil, eſcapes irretrievably into an inſatiable bed of ſand,—or ſome other abſorbent ſubſoil.

For, if we except a few quickſands, which occur on the margins of meadows, and the peat-bogs which occupy their areas, there is not, in the Diſtrict, an acre of retentive SUBSOIL.

The

The Norfolk ſoil, however, is not without its partial evils:—"ſcalds" are as pernicious in Norfolk, as quickſands and ſpringy patches are in cold-ſoiled countries; and, what is worſe, they are, perhaps, incurable; while a partial retentiveneſs may be eaſily removed.

Theſe SCALDS are probably occaſioned by a partial abſorbency; namely, by a *more* abſorbent ſubſoil being interſperſed in patches among one which is *leſs* abſorbent; and, generally, perhaps, by "heads" or prominent parts of the univerſal ſubſtructure ſand, riſing up through a ſtratum of brick-earth; in the manner that "heads of marl" ſhoot up towards the ſurface: as will be deſcribed in the next ſection.

For inſtances of the abſorbency of the Norfolk ſubſoil, ſee MIN. 59.

For obſervations on the ditch-mould of Norfolk, ſee MIN. 77.

For obſervations on the ſoils of the Fleg Hundreds, ſee MIN. 106.

For general obſervations on the friability of the Norfolk ſoils, ſee MIN. 106.

For

For obſervations on the ſoil of the eaſtern coaſt, ſee MIN. 112.

For obſervations on the ſoil of Blowfield Hundred, ſee MIN. 118.

For inſtance of ſcalds being injured by wet weather, ſee MIN. 121.

5.

MANURES.

UNDER this head I purpoſe to enumerate the different *ſpecies* of manure; and deſcribe, ſo far as the obſervations I have been able to make will enable me, their reſpective *natures*.

The principal ſpecies made uſe of in this Diſtrict are:—

Marl,	Dung,
Clay,	Compoſt,
Mould,	Teathe of cattle,
Lime,	Sheep-fold,
Aſhes,	Soot, Rape-cake,
	Malt-duſt, &c.

The

I. The grand foſſil manure of Norfolk is MARL; through whoſe fertilizing quality, judiciouſly applied, lands, which ſeem by nature to have been intended as a ſcanty maintenance for ſheep and rabbits, are rendered capable of fattening bullocks of the largeſt ſize, and of finiſhing them in the higheſt manner.

There are, in this Diſtrict, two ſpecies of marl, very diſtinct in their general appearances; though their quality of fertilizing be ſimilar.

The central and northern parts of the Diſtrict abound, univerſally, with a whitiſh-coloured CHALK-MARL; while the Fleg Hundreds, and the eaſtern coaſt, are equally fortunate in a grey-coloured CLAY-MARL.

The firſt has, in all probability, been in uſe as a manure many centuries: there are oaks of conſiderable ſize now going to decay in pits which have obviouſly been heretofore in uſe, and which, perhaps, ſtill remain in uſe, as marl-pits.

The uſe of clay-marl, as a manure, ſeems to be a much later diſcovery; even yet, there are farmers who are blind to its good effect; becauſe it is not *marl*, but "clay;" by which name it is univerſally known.

The

The name, however, would be a thing of no import, were it not indiſcriminately applied to unctuous earths in general, whether they contain, or not, any portion of calcareous matter. Nothing is "marl" which is not white; for, notwithſtanding the county has been ſo long and ſo largely indebted to its fertilizing quality, her huſbandmen, even in this enlightened age, remain totally ignorant of its diſtinguiſhing properties: through which want of information much labour and expence is frequently thrown away.

One man ſeeing the good effect of the Fleg clay, for inſtance, concludes that all clays are fertile; and, finding a bed of ſtrong brick-earth upon his farm, falls to work, at a great expence, to "claying:"—while another, obſerving this man's miſcarriage, concludes that all clays are unprofitable; and, in conſequence, is at an expence, equally ill-applied, of fetching "marl" from a great diſtance; while he has, perhaps, in his own farm, if judiciouſly ſought after, an earth of a quality equally fertilizing with that he is throwing away his time and his money in fetching.

This is a ſtrong evidence of the utility of chemical knowledge in the inveſtigation of foſſil manures.

Before I left the county, I collected a variety of ſpecimens of marls, clays, and ſoils of different parts of it. Theſe, with a ſtill greater variety which I have collected in other parts of the kingdom, I hope to find leiſure, at ſome future time, to analyze; and, from the reſults, endeavour to draw ſome general inferences.

At preſent I ſhall confine myſelf to

1. The chalk-marl of Thorp-market, in the Hundred of North-Erpingham;

2. The clay-marl of Hemſby, in the Hundred of Eaſt-Fleg;

3. The ſoft chalk of Thorp-next-Norwich; commonly called Norwich marl; and to

4. The hard chalk of Swaffham.

1. Chalk-marl of Thorp-Market.

The natural ſituation of the white marls of this Diſtrict is ſingular: they do not lie in ſtrata, as foſſils in general do;—nor in a continuation of rock, like chalk and limeſtone; but

but in distinct masses, of different figures and magnitudes, rising with irregular heads toward the surface, and sinking to, perhaps, ten, perhaps, twenty feet deep, and sometimes to a depth unfathomed. If the abyss of sand, in which they lie buried, could be rendered transparent, these *clouds* of marl would, I apprehend, be seen scattered under the surface of this country, in resemblance of the clouds of vapour, which we frequently, in summer, see suspended in the atmosphere.

The general appearance of these marls differs, not only in different beds or "jams;" but the same jam generally affords marl of different appearances and qualities: the upper part is usually fouler and more friable, while the lower parts of the jam are of a purer, firmer, more chalk-like nature; and are usually interspersed with "chalk-stones;" —— namely, lumps of *chalk*, firm enough to be used in writing; and with *flints*, similar to those usually found in chalk-pits of other districts.

The specimen before me was taken from the middle of a ten-foot jam. The general appearance is that of a dirty, rough, friable

chalk; its *colour* being ſomewhat darker, and its *contexture* ſomewhat ſofter, and more brittle, than the common writing-chalks of Surrey and Kent.

In the open air, it *breaks* readily, and incorporates freely with the ſoil.

In water, it *falls* in a manner inſtantaneouſly *; but *diſſolves not*, in any proportion, in this element †.

In the fire, it loſes more than one-third of its weight ‡, and burns to *lime* §.

* A piece of this *marl* plunged into water fell with a ſmart crackling noiſe in a few ſeconds: but a ſmall piece of *chalk* contained in it, received no change from the water. Hence we have a ſimple *differential teſt* of theſe two foſſils.

† One hundred grains——pulverized, dried, weighed, placed in a filter, flooded repeatedly with cold and warm water, dried, weighed;—received not the ſmalleſt perceptible diminution of weight.

‡ A piece, weighing fifty grains, retained in a ſtrong fire three hours, loſt eighteen grains and a half; weighing, when cool, thirty-one grains and a half.

§ The pit from whence the ſpecimen made uſe of in this analyſis was taken, being worked as a lime-quarry, I had repeated opportunities of obſerving the effect of the lime, both as a manure and as a building-material. Its ſtrength and operation, in both caſes, are, as far as common obſervation can judge, ſimilar to thoſe of the chalk-limes of Surrey and Kent.

In

In the acid of ſea-ſalt, the principal part of it is *diſſolved*, and taken up by the acid; leaving a ſmall proportion, of groſs earthy matter, undiſſolved. Of one hundred grains of this marl,—pulverized, dried, weighed, mixed with water, and ſaturated with this acid,—eighty-five grains paſs through the filter; leaving a reſidue of fifteen grains: two-thirds of which is palpable, conſiſting chiefly of ſand and flint; one-third a fine impalpable clay-like matter; mixing freely with water;—ſome part of it ſubſiding with reluctance.

A ſolution of ſalt of tartar, added to the filtered liquor, precipitates the *whole* of the diſſolved matter; in a *ſnow-white powder*: which being retained two hours and a half in a ſtrong fire, loſes five-twelfths of its weight *, and is concreted into a porous, friable *aſh-coloured* maſs of quick-lime; which being re-ſuſpended in acid, and again precipitated, regains the weight loſt in the fire, and regains its *ſnowy whiteneſs*.

* Thirty grains of the powder, perfectly dried, loſt ſomewhat more than twelve grains and a half; the lime, when taken out of the crucible, weighing ſomewhat leſs than ſeventeen grains and a half.

Therefore, it is highly probable, that the ſoluble matter of this marl is a pure, or nearly a pure, *calcareous earth* †.

We may therefore venture to ſet down, as the component parts of one hundred grains of this marl, which may be taken as a fair ſpecimen of the white marls of this Diſtrict,

85 grains of chalk,
10 grains of ſand,
5 grains of clay.

100 grains.

2. The Clay-Marl of Helmsby.

In its natural ſtate, it is ſituated in extenſive beds or jams of conſiderable depth (ſee Min. 106). Its *colour*, when dry, ſomewhat lighter than that of fuller's earth, ſlightly tinged with ſpecks of a yellowiſh-brown colour: its *contexture* that of a gritty fuller's earth, interſperſed with granules of white chalk.

† The lime has a perceptible, but very faint, *yellowiſh* tint. By the addition of a tincture of galls the ultimate filtered liquor becomes turbid: a *white* mucilage ſubſides; leaving a tranſparent *green* liquor. A tincture of galls added to the lime-water, before the addition of the acid, has a ſomewhat ſimilar effect. But, previous to the calcination, tincture of galls produces no change whatever upon this marl, either in a diluted or a diſſolved ſtate.

In

In the open air, it *breaks* into ſmall ſquares; and mixes freely with the ſoil.

In water, it *falls* readily; but *diſſolves not*.

In the fire, it burns to *brick* *.

In the acid of ſea-ſalt, part of it is diſſolved; but the major part is indiſſoluble. Of one hundred grains, forty-three grains, only, paſs through the filter; leaving a reſiduum of fifty-ſeven grains; fifty grains of which is an impalpable clay-like matter; the remaining ſeven grains palpable; chiefly ſand; but mixed with ſome beautifully-coloured granules and fragments.

A ſolution of ſalt of tartar precipitates the whole of the diſſoluble matter; which falls of a *pure white*; but dries to a *ſomewhat yellowiſh* powder; which in burning loſes exactly five-twelfths of its weight; and concretes into a maſs of *ſulphur-coloured lime*: which being

* A piece weighing fifty-two grains was kept in a ſtrong fire more than two hours. Its *colour* was changed to a *faint-red*, or fleſh-colour; its *contexture* to that of a hard-burnt brick, unchangeable in water; its weight forty grains. Being pulverized and ſaturated with the acid, the filtered liquor afforded, by an addition of the alkali, a *grey-coloured* mucilage, which fell reluctantly, and dried to a *pale cinnamon-coloured* ſubſtance.

again diſſolved and again precipitated, regains the principal part of its original weight, and loſes its yellow ſhade; the precipitated matter drying to a *ſtone-coloured* powder.

From theſe circumſtances it appears, that the component parts of an hundred grains of the clay of Hemſby, which may be conſidered as a ſpecimen of the calcareous clays of the eaſtern coaſt of Norfolk,—are

50 grains of *clay*, probably containing ſome ſmall proportion of *iron*;
43 grains of a ſomewhat impure *chalk*;
7 grains of *ſand*; with an inconſiderable admixture of coloured granules and fragments.

100 grains.

3. Soft Chalk of Thorp-next-Norwich.

In its natural ſtate,—it is ſituated in an extenſive bed, or rock; forming a bank of the river Yare. Its *colour* a yellowiſh-white, or pale ſtraw colour: its *contexture* that of a ſoft, light, ſmooth chalk, ſufficiently firm, when perfectly dry, to mark with *.

* It is obſervable, that the ſpecimen under analyſis has been taken from the quarry, and kept in a dry ſituation, more than four years.

In the open air †.—

In water, it neither *falls* ‡, nor *diſſolves*.

In the fire, it burns to *lime*, loſing one-third of its weight in the fire.

In the acid of ſea-ſalt, almoſt the whole of it is diſſolved. Of one hundred grains, ninety-eight paſs through the filter; leaving only two grains of reſidue. Principally a dark-brown ruſt-like matter; fine enough to lodge itſelf *in* the pores of the paper, leaving only a few particles of ſand *upon* the filter.

A ſolution of the ſalt of tartar precipitates the diſſolved matter in a *white mucilage*, which dries to a *yellowiſh-white powder*; which, being retained three hours in a ſtrong fire, loſes two-thirds of its weight, and is converted into a friable maſs of *yellowiſh-white* quick-lime: which being re-diſſolved and re-precipitated,

† Having omitted to make an *intentional obſervation* on this circumſtance, I cannot ſpeak to it poſitively; but, from the ſmall quantity uſually ſet on, and the ſhort time it laſts, as well as from *general obſervation*, I believe, that it mixes readily with the ſoil.

‡ A piece, the ſize of a hazel-nut, lay ſeveral hours in water without undergoing the leaſt change.

regains

regains its weight, and falls in a *ſnow-white mucilage*, which dries to a *nearly white powder*.

Therefore, one hundred grains of this chalk contains,

Ninety-eight grains of a matter, diſſoluble in the acid of ſea-ſalt, and is probably a pure, or nearly a pure, *chalk*; and,

Two grains of indiſſoluble matter, whoſe properties I have not, yet, ſufficiently aſcertained.

This chalk contains the greateſt proportion of diſſoluble matter,—or, in other words, is the pureſt calcareous earth, I have yet analyzed. The chalk of Betchworth-Hill (a continuation of Box-Hill, near Dorking in Surrey), celebrated as a manure (for which purpoſe it is fetched, twelve or fourteen miles, by the farmers of Suſſex), affords a reſiduum of more than one-tenth of its weight: whereas the chalk of Thorp-next-Norwich affords only one-fiftieth.

4. The Hard Chalk of Swaffham.

In its natural ſtate, it is ſituated in an extended rock, riſing to near the ſurface, and worked ten or twelve feet deep, as a lime-

quarry.

quarry. Its *colour* nearly white: its *contexture* that of a *hard* Kentiſh chalk; but mellows, I find, by keeping in a dry ſituation. When taken from the quarry (in 1782) it was too hard to mark freely; now (1786) it is ſufficiently ſoft for the purpoſe of writing.

In water, it remains perfectly concrete.

In the acid of ſea-ſalt, it, in a manner wholly, diſſolves; the ſolution being almoſt limpid: but, in filtering, a ſoil of a dark-brown colour, and a few (perhaps twenty) particles of ſand are left in the filter.

A ſolution of ſalt of tartar precipitates the diſſolved particles in a *ſnow-white powder*.

Therefore, this chalk is, *in its natural ſtate*, NEARLY A PURE CALCAREOUS EARTH.

II. MOULD.—Beſides what come under the idea of marls and clays, a variety of other earths are induſtriouſly ſought after by the Norfolk huſbandmen; for the purpoſe of bottoming their farm-yards and dunghills; with a view to catch the drainage of the dung. The dung and the mould are afterwards turned up and mixed together; by which means the mould becomes ſaturated with vegetable juices communicated to it by the dung: and it is a com-

mon

mon obſervation, that the mould thus prepared "lies longer in the ground"—is a more permanent manure, than the dung itſelf.

This is not improbable; for crude unmixed dung, buried in lumps, and diſſolved in the ſoil by heavy rains, is liable, no doubt, to be carried away, in part, below the vegetative ſtratum; eſpecially of a light ſoil: therefore, to arreſt and *fix* it, before it be carried upon the land, ſeems to be, in the management of ſuch a ſoil at leaſt, highly judicious.

This piece of good management is talked about in moſt countries, and practiſed perhaps by ſome few individuals; but, in Norfolk, a light land country, it is the univerſal practice*.

The principal ſource of this mould—provincially, "manner"—is the ſhovellings of ditches; which, in this country, are found to contain in themſelves a ſingularly fertilizing property. This rich mould is not compoſed of the ſediment of the waſhings of the adjoin-

* I mean, to bottom dung-heaps with a ſtratum of mould. It is not equally univerſal to turn over and mix the dung and mould together; but this is frequently done by good huſbandmen. It is not, however, in every caſe, eligible. A dung heap, formed *in the ſpring*, for turneps, would, in a *dry* ſeaſon, be injured by ſuch treatment.

ing

ing incloſures; many of the ditches perhaps never having, from the time of making to the time of ſcouring, admitted a current of water; but conſiſts altogether of dead weeds, leaves of the hedge, and the mouldering of the bank and the ſides of the ditch.

The effect of the air of Norfolk upon the Norfolk ſoil expoſed in this manner is extraordinary: the moſt barren ruſty ſubſtratum expoſed for a few years in the face of a ditch-bank, is changed into a rich black mould, of a fertilizing quality. This change, in a greater or leſs degree, takes place in every country; but I have not obſerved it, any where, ſo obvious as it is in this Diſtrict. *Perhaps*, the ſea-air, acting upon a looſe porous ſoil, may aſſiſt in producing this change. Be this as it may, it is an intereſting fact; by which, perhaps, Norfolk huſbandmen, at leaſt, might profit (ſee MIN. 77. on this ſubject.).

Another ſource of "manner" is *uſeleſs turf*. The backs of ditch-banks—the borders of fences in general—the ſides of lanes, and the nooks of yards, &c. &c. which, in other places, are ſuffered to remain, from generation to generation, the nurſery of weeds, are, by the Norfolk farmers,

mers, turned up into ridges, to rot the roots, &c. of the graſs and weeds, and to receive the melioration of the air; which done, it is carted, in due ſeaſon, to the par-yard or dung-heap.

Another ſpecimen of manure much coveted here is "mergin"—that is, the rubbiſh of old-buildings.—Sea-ſtone walls afford a great quantity of this valuable article; which, from its immediate effect, and its duration, taken jointly, is conſidered, by ſome, as being ſuperior to marl, mould, or even dung itſelf; eſpecially upon ſcalds, and hot burning ſoils. It is ſometimes mixed with dung; but more commonly ſet on alone.

III. Lime is in good repute, though not in general uſe, as a manure; huſbandmen in Norfolk being, like huſbandmen in other places, of different opinions reſpecting the value of lime. This difference in opinion will ever remain while general concluſions are drawn from particular incidents. The effect of lime upon different ſoils is as various as the ſoils themſelves; and nothing but experiment can determine whether it will, or will not, be beneficial to a given ſoil.

It is uſed by many judicious farmers, even after marl, with ſucceſs. Upon hot burning ſoils it is generally found of the greateſt efficacy; and is perhaps the moſt effectual cure of "ſcalds" which has yet been diſcovered: from theſe and other circumſtances, lime is here conſidered as a *cold* manure.

IV. Ashes.—Theſe are not in eſtimation as a manure in this country: even thoſe of the hearth are in a degree neglected.

The meadows and fens abound with peat-bogs, which in ſome places would be conſidered as ineſtimable ſources of manure. The peat of the meadows would no doubt afford an ample ſupply of aſhes; but thoſe of the fens, being wholly compoſed of the roots, &c. of aquatics, burn down to an inconſiderable quantity of aſhes, of a white colour, and of a volatile nature, like thoſe of paper. Even the ſmall quantity they afford is not conſidered, by men who ſtand high in their profeſſion, as a valuable manure.

Sod-burning is not, I believe, practiſed in any degree: I never, at leaſt, met with an inſtance of it; nor, indeed, with any inſtance in which aſhes were intentionally produced ſolely as a manure; except one, in which ant-hills were burnt for this purpoſe (ſee Min. 6.).

Dung.

V. DUNG.—The *quality* of dung is here attended to with greater preciſion than in moſt other Diſtricts.

"Town-muck" ſtands firſt. Norwich affords a ſupply to the country round it; while Yarmouth produces, for its neighbourhood, a muck of a ſingular quality.

Yarmouth is in a manner ſurrounded by marſhes and the ſea; ſtraw, of courſe, becomes there a dear article. This, and the vicinity of the ſea-ſhore, has eſtabliſhed a practice, which I believe has been in uſe time immemorial, of *littering* ſtables with ſea-ſand inſtead of ſtraw. As the bed becomes ſoiled or wet, freſh ſand is ſcattered on, until the whole is in a degree ſaturated with dung and urine: the ſtall is then cleared and a freſh bed of ſand laid in. By this means muck of a quality ſingularly excellent is produced: it is fetched by the farmers of the Fleg Hundreds to a very great diſtance.

The "muck" of the "par-yard" too, is eſteemed of various qualities.—That of the ſtable, made from horſes fed on hay and corn, is reckoned the beſt: that from *fatting* cattle the next; while that of *lean* cattle, and of *cows* in particular, is conſidered as of a very inferior quality;

quality; even though turneps make a part of their food. The dung of ſuch cattle, kept on ſtraw, alone, is eſteemed of little or no value. And, what may appear extraordinary to many, the muck from the ſtraw which is trodden, only, is by ſome thought to be better than that from the ſtraw which is eaten by lean-ſtock.

VI. Compost.—This may be ſaid to be the common manure of the Diſtrict; for there is very little dung ſet on without being firſt mixed, in the yard, or in the field, with mould, marl, or other "manner." See Mould.

Sometimes a conſiderable proportion of "manner" is added to the dung: I have known a compoſt of one part marl, one part mould, and the third part dung, uſed in common, by a very induſtrious judicious farmer, with ſucceſs.

It ſeems to be a fact well-eſtabliſhed, that although marl, alone, will not anſwer on land which has been recently marled; yet mixed with dung, it produces a beneficial effect.

VII. Teathe.—This is a provincial term, conveying a compound idea, for which we have no Engliſh word. When we make uſe of the term

fold, as applied to the fertilizing effect of ſheep pent upon land, we do not mean to convey an idea merely of the fœces they leave behind them, in this caſe, but alſo of the urine, the trampling, and perhaps of the perſpiration, and the warmth, communicated to the ſoil by the practice of folding. *Teathe* in like manner is applied to the fertilizing effect of cattle, upon the land upon which they are foddered with turneps or other food; whether that fertilizing effect be produced by their dung—their urine—their treading—or by their breath—their perſpiration—and the warmth of their bodies.

This term is applied likewiſe to ſheep and other ſtock: nor is it confined to ſtock ſhut up within narrow limits, but is extended to paſturing ſtock; implying, collectively, the returns which they make to the lands they depaſture.

The teathe of cattle is, like their dung, eſtimated according to the quality of the food, and the quality of the cattle which conſume it. The teathe of fat heavy bullocks, at head-keep, is eſteemed very beneficial to the lands of Norfolk; while that of cows and lean-ſtock is, the "jamming" apart, conſidered of little value.

VIII.

VIII. SHEEPFOLD.—There are few ſheep kept in this Diſtrict; and the fold is not in uſe; except by a very few principal farmers; and by ſome gentlemen who keep large tracts in hand. The value of ſheepfold is well underſtood; but the main object of the Eaſt-Norfolk huſbandry is bullocks; and the farmers, by their practice, ſeem well aware that ſheep among cattle are unprofitable ſtock.

IX. SOOT is in good repute; and, near the towns, is in uſe. RAPE-CAKE is alſo in good eſteem, in ſome parts of the Diſtrict; as are MALT-COOMBS, in places where they can be had at a reaſonable price.

For the *application*, and the *method of applying* theſe various manures, ſee the article MANURE-PROCESS.

For the method of *raiſing farm-yard manure*, ſee FARM-YARD MANAGEMENT.

For an inſtance of *burning ant-hills* for manure, ſee MIN. 6.

For an inſtance of utility of the *ſhovelling of a ſheepfold* to graſs land, ſee MIN. 10.

For an inſtance of the uſe of *ſheepfold* to barley, ſee MIN. 11.

For experiments on *different manures* for wheat, ſee MIN. 18.

For a calculation on the value of *ſheepfold*, ſee MIN. 18.

For experiments and obſervations on the action of *lime*, ſee MIN. 29.

For reflections on *bullock-teathe*, upon the fair-ſtead of St. Faith's, ſee MIN. 31.

For a deſcription of the *Fleg-clay*, ſee MIN. 106.

For obſervations on the effect of *calcareous earths* on ſtiff land, ſee MIN. 106.

For a deſcription of the *marl and clay of the coaſt*, ſee MIN. 112.

FARMERS.

6.

FARMERS.

I DO NOT mean to hold out the farmers of Norfolk as a ſeparate order of men: farmers, in every country, have, in their dreſs, their manner, their converſation, and their acquirements, a ſtriking reſemblance: nevertheleſs, in every country, I find ſome diſtinguiſhing characteriſtic.

The farmers of Norfolk are ſtrongly marked by a liberality of thinking, and, in conſequence, by an openneſs in their manner and converſation. This may be accounted for: many of them have been, and ſome of them ſtill are, rich: this has led them to mix, in a greater or leſs degree, with what is called the World; of which their leaſes render them independant. A tenant-at-will, be his riches what they may, is a ſubaltern in ſociety; in which he dares not to mix, leſt his landlord, or his landlord's aſſociates, ſhould be pleaſed to take offence.

Thus the clergy, and thoſe men of ſmall income who fall under the denomination of country-'ſquires, are in moſt places looked up to by farmers; while in Norfolk they are conſidered, by the principal farmers at leaſt, as belonging to the ſame order of ſociety*.

The

* As an inſtance of the *complacency* and *good-breeding* (I do not mean *complaiſance* or *politeneſs*) of the ſuperior claſs of Norfolk farmers, I will relate the circumſtances of deportment which occurred to myſelf, at a farm-houſe, at which I ſlept accidentally.

Our hoſt having given ſtrict orders, and ſome perſonal atten ion, reſpecting our horſes, the company were led into a ſpacious kitchen, characterized by cleanlineſs and a chearful fire. A decent upper-ſervant preſen'ed herſelf. Supper was ordered, and a bottle of wine, in a neat faſhionable decanter, ſet upon the table. A ſmart, but not extravagant, ſupper ſoon made its appearance. The houſekeeper waited in an adjoining room, and a maid-ſervant at the table, with a degree of propriety and decorum frequently unſeen in the houſes of thoſe who call themſelves gentlemen. A trifling incident proved the good-ſenſe, if not the good-breeding, of our hoſt and his family. Forgetting that I was at the table of a *Norfolk farmer*, I aſked for an article of the ſide-board which was not at hand. The ſervant went out of the room as if to fetch it; but inſtead of returning, the houſekeeper came in to make an apology for not happening to have it in the houſe: ſhe withdrew: the maid-ſervant returned; while the converſation went on without any notice being taken,

or

The lower claſs of Norfolk farmers, however, are the ſame plain, men which farmers in general are, in every other country; living in a great meaſure with their ſervants. Another claſs live in the kitchen with their ſervants, but eat at a ſeparate table; while the upper claſſes have their "keeping-rooms" and other commodious apartments.

In general they riſe early, breakfaſt early, and dine univerſally at twelve o'clock, at leaſt the ſervants. This is well adapted to the Norfolk practice of going what are called two journies a day with the plow-teams: the men reach home by dinner-time; and, having refreſhed themſelves and their horſes, are ready to

or any obſervation whatever being made on the aukwardneſs of the circumſtance.

In the morning when I returned from a walk, I found, in a decently, but not extravagantly, furniſhed parlour, two tables ſet out; one with tea equipage, the other with napkins, bread and butter, ham, raddiſhes, &c. The houſekeeper ſat at the former, placed on one ſide of the room, and made tea; which was brought to us at our table on the other: and this without the leaſt ſhew of parade or formality. In ſhort, the whole treatment had ſo much the air of that free and-eaſy reception which I had formerly experienced on the eſtate of a Weſt-India Planter, that it was with ſome difficulty I could believe myſelf in the houſe of an Engliſh farmer.

to ſtart again at one to two o'clock for the afternoon journey.

For cauſes of their preſent decline with reſpect to riches, ſee MIN. 58.

7.

WORKMEN.

WORKMEN, here, as in other places, are diviſible into YEARLY SERVANTS and DAY-LABOURERS.

At the public hiring of YEARLY SERVANTS, an excellent cuſtom ſubſiſts in this Diſtrict: The High-Conſtable of the Hundred in which a ſtatute is held, holds, at the ſame time and place, what is called a "petty ſeſſions;" at which the hiring and its attendant circumſtances are, or may be, regiſtered; which regiſter becomes, in caſes of diſpute, either between maſter and ſervant, or between pariſh and pariſh, a uſeful record.

In reſpect to DAY-LABOURERS, two remarkable circumſtances are united; namely, hard work

work and low wages! A Norfolk farm-labourer will do as much work for one ſhilling, as ſome two men, in many other places, will do for eighteen-pence each. There is an honeſty, I had almoſt ſaid an honour, about them, when working by the day, which I have not been able to diſcover in the day-labourers of any other country.

For an evidence corroborating theſe obſervations, ſee MIN. 98.

For reaſons accounting for their activiy, ſee MIN. 100.

For an inſtance of ſtill greater exertion, ſee MIN. 106.

HORSES.

8.

HORSES.

HORSES are the only beaſts of labour made uſe of in the Norfolk huſbandry: there is not, perhaps, one OX worked in the county.

The farm-horſes of Norfolk were, formerly, a ſmall brown-muzzled breed; light-boned; but ſtood hard work, and hard keep, in a remarkable manner; and two of them were found quite equal to the Norfolk plow in the Norfolk ſoil.

Of late, ſtallions, of the heavier black breeds of Lincolnſhire, Leiceſterſhire, &c. have been faſhionable; and at preſent (perhaps unfortunately for the country) the true Norfolk breed is almoſt entirely worn out.

I have heard ſenſible old men regret this; and complain heavily againſt the preſent breed: they eat up too much of their corn, and are not ſo active as their favourite "old ſort."

The preſent breed, however, are by no means heavy: on the contrary, being as yet a mon-

grel

grel kind between the two breeds, they are, compared with the elephants of Lincolnſhire, a light, punch, active little horſe.

The ſingular breed of Suffolk is at preſent the faſhionable *croſs*; and, to my mind, a very judicious one: for, although this ſtrange *variety* of the equeſtrian ſpecies—or, to ſpeak from appearances, this half-horſe half-hog race of animals—are not ſo handſome in harneſs as the preſent beautiful breed of Leiceſterſhire; they appear to me, from a knowledge of both kinds, to be better adapted to the Norfolk huſbandry. Their principal fault is a flatneſs of rib: if this could be improved, they would, in my opinion, be the firſt breed of draught-horſes in the kingdom.

It is, however, the lighter, more active part of them which is beſt adapted to the Norfolk huſbandry. Had the original Norfolk breed been croſſed with theſe, inſtead of the ſlugs of the Fens, the produce could not have failed of being excellent.

Five horſes are here called a "teamer," and are uſually placed under the care of one "teamerman;" who, in more leiſure-times, plows with two of them in the morning, and

with

with other two in the afternoon ; but, in general, a labourer, or a boy, works one pair of them while the teamerman works the other pair, two journies a day ; having always, in this caſe, one horſe at reſt.

But in ſeed-time, more particularly in "barley ſeel," the fifth horſe goes to harrow ; every horſe upon the farm going to work at ſix or ſeven in the morning, and ſtays till twelve ; goes out again at one or two, and remains at work till ſix or ſeven.

In a waggon, upon the road, five horſes are univerſally in uſe.

Whether upon the road, or on the farm, the common practice is for the horſes to trot with empty carriages.

Formerly, this admirable cuſtom was carried too far : inſtead of trotting for diſpatch, races were run, at full ſpeed, upon the road. The lead was the goal contended for : a fore-horſe which would, at a word or a ſignal, break out at full ſpeed, was, by the young men who took delight in the diverſion of "roading," conſidered as invaluable. Many waggons, and ſome necks, having been broken by this dangerous amuſement, it is, at preſent, a good deal laid aſide ; though not yet entirely left off. I have

myſelf

myſelf ſeen a race of this kind: a following team broke out, upon a common, and, unmindful of the ruts, hollow-ways, and roughneſſes, contended for the lead; while the leading team as eagerly ſtrove to keep it; both of them going at as full a gallop as horſes in harneſs could go, for a conſiderable diſtance; the drivers ſtanding upright in their reſpective waggons. The cloſe of the race was the moſt dangerous part of it; for ſo ſoon as the fore-horſe of the team which broke out, found that he had gained the lead, he ruſhed eagerly into the road; which in that place happening to be hollow, it appeared to me miraculous that no miſchief was done. Savage, however, as this cuſtom may ſeem, the preſent ſpirit of activity may be in ſome meaſure indebted to it; and whenever it is wholly laid aſide, I hope it will be from motives of prudence, rather than from a want of ſpirit and inclination to continue it.

THE KEEP OF HORSES in Norfolk, notwithſtanding the work they go through, is leſs expenſive than that of other places, where large unwieldy horſes ſeem to be kept for ſtate, rather than for labour. This, though prevalent in many well-cultivated diſtricts, is an evident abſurdity,

abſurdity. There may be caſes, in which heavy loads are to be drawn ſhort diſtances, and where the number of horſes are limited, as in London; in which caſes heavy powerful horſes may be eligible; but, from the obſervations I have been able to make, a compact horſe is much fitter for the varied employments upon a farm; and, with reſpect to keep, a main conſideration in the choice of a farm-horſe, the advantage is greatly in favour of ſmall horſes. The preſent breed in Norfolk, ſtill retaining a conſiderable portion of the original blood, are kept at half the expence at which many farm-horſes, in different parts of the kingdom, are ſupported.

In the leiſure-months of winter, barley-ſtraw is, in general, their only rack-meat; and thro' winter and ſpring, they are ſuppered up with it; except, perhaps, in the hurry of barley ſeed-time; againſt which a reſerve of clover-hay is made; provided the teamerman does not make away with it before that time. A Norfolk farmer has a ſimilar difficulty in preventing his men from ſtealing hay, as thoſe of other countries have to keep them from pilfering more than their allowance of corn.

I met with one inſtance, in which a judicious regulation was made, with reſpect to horſe-hay.

At

At Michaelmas, the maſter ſets apart what he conſiders as a ſufficient quantity to laſt to the cloſe of barley ſeed-time. This allowance he conſigns wholly to the care of his men; who never fail to huſband it in ſuch a manner as to have the neceſſary reſerve at barley ſeel; whereas before he fell upon this regulation, his horſes were either worked down to ſkeletons, or he was obliged to buy hay for them at that ſeaſon.

With reſpect to corn, a buſhel each horſe, a week, is, in the buſieſt ſeaſon, conſidered as an ample allowance; in more leiſure-times a much leſs quantity ſuffices.

Oats are the uſual horſe-corn; but barley, when cheap or unſaleable, is ſometimes given to horſes. In this caſe, it is, generally "*malted;*" that is, ſteeped, and afterwards ſpread abroad, for a few days, until it begin to vegetate; and, in this criſis, is given to the horſes. It is thought to be leſs heating, in this ſtate, than it is when given to the horſes in its natural ſtate.

Chaff is univerſally mixed with horſe-corn: the great quantities of corn grown in this country afford, in general, a ſufficiency of *natural* chaff; ſo that *cut chaff* is not much in uſe:

the

the chaff, or rather the awns, of barley, which, in ſome places, are thrown as uſeleſs to the dung-hill, are here in good eſteem as horſe-provender. Oat-chaff is deſervedly conſidered as being of a much inferior quality.

The ſummer keep of horſes, is almoſt wholly, clover:—ſome few tares are grown, but the quantity is inconſiderable.

Soiling horſes, in the ſtable, is not here a practice; except for baiting in the day-time; the horſes being univerſally kept out at night; and, generally, in clover-lays.

A ſingular expedient to prevent their breaking paſture is here practiſed:—Horſes inclined to this vice are chained, two-and-two, by the fore-feet; one end of a chain, about a yard long, being faſtened with a ſhackle to the near-foot of one horſe, and the other end to the off-foot of the other. This, however, though an excellent way of preventing their rambling, is a dangerous practice: accidents frequently happen. I knew an inſtance of two horſes, coupled in this manner, falling into a marl-pit twenty feet deep; and though one of them miraculouſly eſcaped, in a great meaſure unhurt, the other was mangled in a manner, equally ſingular,

and

and died on the ſpot. Accidents apart, the practice is a good one: horſes accuſtomed to be coupled in this manner, become, in a ſtriking manner, tractable and civil to each other; ſo that their feeding and ſleeping is not ſo much interrupted, as in theory might be conceived.

Another practice, ſingular I believe to Norfolk, is that of "roping" horſes, not only in common-fields but in incloſures: thus, inſtead of turning the horſes looſe into a piece of clover, the practice is to tedder them upon it; beginning on one ſide, and clearing the herbage as they go. This is a middle way between ſoiling and paſturing: it ſaves the expence of mowing, and carrying to the ſtable; but does not eat up the herbage ſo clean as ſoiling does: on the other hand, it is more ſaving of herbage than paſturing is; but there is not only trouble and expence, but a degree of riſk, in roping.

9.

IMPLEMENTS.

I. THE WAGGONS of Norfolk are of the middle ſize and middle height: higher than thoſe of Glouceſterſhire; but lower than thoſe of the midland counties. They are very numerous: upon a middle-ſized farm, three or four are uſually kept; carts being ſeldom uſed here (notwithſtanding the levelneſs of the country) in getting in harveſt. However, to render carts uſeful in harveſt—more eſpecially if waggons are wanted—a ſingular expedient is here put in practice. With a common dung-cart and a pair of old waggon-ſhafts and fore-wheels, a carriage is formed; which, partaking both of a cart and a waggon, is called a

II. 'MAPHRODITE. The points of the ſhafts reſt on the bolſter of the fore-wheels, to which they are faſtened. A copſe, or fore-ladder, ſimilar to that which is ſometimes fixed upon a cart-ſhafts, but longer, is alſo ſupported by the bolſter, projecting over the horſe in front, in the manner of the fore-ladder of a waggon; the length and the breadth of the top of the

"'maphrodite" being the ſame, or nearly the ſame, as thoſe of a waggon. In a hilly country, where carts are in a manner uſeleſs in harveſt, theſe CART-WAGGONS would be found extremely convenient.

III. THE CARTS of Norfolk have a ſingularity pertaining to them. The ſhafts, inſtead of being fixed hinge-wiſe to the axle, or to the bottom of the cart, are a continuation of the ſide-pieces of the bottom itſelf: of courſe, the Norfolk carts do not *tilt* in the manner in which carts in general do.

In ſetting on manure, a long belly-band is made uſe of; ſo that the ſhafts riſe with the fore-part of the cart; the ſhaft-horſe being the only ſtay to its tilting up entirely. Nor is this an uncommon circumſtance; the ſhaft-horſe, in this caſe, remaining upon his hind-legs until he be drawn down again by the fore-horſes. This, to common obſervation, is an aukward and a *barbarous* cuſtom: I have not, however, been able to hear of a ſhaft-horſe receiving any great injury from this practice *.

* A broad ſoft belly-band, of leather or hemp, ought however to be uſed on this occaſion. The ſharp iron chains which

Marling, it is highly probable, brought it into uſe: the wear-and-tear of carts in this rugged operation is endleſs; the ſimpleſt, ſtrongeſt, and leaſt expenſive cart has, of courſe, been for ages, the ſtudy of Norfolk huſbandmen; and it is probable that a more ſimple, a ſtronger, or a leſs expenſive cart cannot be deviſed than that above-deſcribed; which is in common uſe in this Diſtrict.

Carts of the common conſtruction, of which there are ſome few uſed, here, for particular purpoſes, are called TUMBRELS.

IV. THE NORFOLK PLOW is ſtill more ſingular in its conſtruction than the Norfolk cart; and, what is equally ſingular, it is, in a manner wholly, confined to the county of Norfolk. The firſt I ſaw was at Thetford, and I do not recollect to have ſeen one plow of any other conſtruction while I remained in the country, nor one of that conſtruction ſince I left it.

It is true, this implement has been diſtributed, at different times, in almoſt every diſtrict in the kingdom; but it has not, I believe, been *adopted*

which are frequently made uſe of, are painful to the *eye* at leaſt.

in any one of them;—except perhaps in Nottingham Foreſt.

There is no doubt of the excellency of the Norfolk plow in cultivating the Norfolk ſoil; or any ſoil which is ſimilar to it; namely, a ſhallow, ſandy loam, free from obſtructions. But the width, and general ſhape, of the ſhare render it utterly incapable of being worked in a ſtrong ſoil, in which ſtones or other obſtructions abound: and the uſual manner of ſetting the hind part of the "plat" or mould-board, equally prevents it from turning, properly, a deep ſquare furrow.

The peculiarities of its conſtruction are principally theſe:—the wheels are taller, and their tackle more complex, than thoſe of other ſmall plows; the form of the wheels themſelves being, however, beautifully ſimple. The ſhare is unuſually broad, flat, and blunt at the point. The *mould-board* is not of wood, but of iron, ſometimes wrought ſometimes caſt *; being a

* *Caſt-iron ſhares* have lately been invented, and a patent procured for them, by a perſon of Norwich, For the Norfolk plow, in the Norfolk ſoil, they appear from

ſeparate ſtrong *plate*, twiſted into a form reſembling the mould-board of the modern little plow of Yorkſhire and other Diſtricts; which, it is probable, has been copied from the Norfolk "plat." Another thing remarkable in the Norfolk plow, though not ſingular to it, is its having only one handle.

There are readers, perhaps, who will expect that a drawing and dimenſions of the Norfolk plow, and, perhaps, of the other implements peculiar to the country, ought to have been given in this work; in order that copies of them might have been made in other Diſtricts. The idea, in theory, is plauſible; and I have myſelf, as writers in general on the ſubject of huſbandry have, ſpent much time in the purſuit of it. Experience, however, has convinced me that, with reſpect to myſelf at leaſt, it has been time ill-ſpent: I have found even patterns inſufficient guides to workmen: ſo much depends on minutiæ

the ſpecimens I have ſeen of them, to be a valuable invention. If they can be made *firm* enough to ſtand in a ſtony ſoil, and hard enough to retain a ſufficient edge in a gravel, they muſt prove, to agriculture in general, a moſt valuable acquiſition. *Jan.* 1787.

in

in the conſtruction of the more complex implements of agriculture. Nay, the very implement which gives riſe to theſe obſervations, conſtructed in Norfolk in the moſt complete manner, and furniſhed with every neceſſary appendage, has lain uſeleſs upon a ſoil it ſuited, until a Norfolk plowman was ſent to hold it! How unreaſonable, then, to expect utility from a drawing of it!

Theſe circumſtances are not ſingular to the Norfolk plow; I have known them attend other implements tranſferred from one part of the iſland to another: and I will beg leave to obſerve, here, in general terms, that whoever wiſhes to introduce an implement which is in uſe in ſome diſtant Diſtrict, would do well to have it not only conſtructed, but ſet to work, in the country where it is in uſe; and I will venture to add, that ſucceſs cannot be inſured unleſs a perſon accuſtomed to the working of it accompanies it, and ſets it to work in the Diſtrict into which it is intended to be introduced.

This is, no doubt, an expenſive way of proceeding; but it is a certain one: while every other expedient is throwing away, or

at leaſt riſking, a certain expence, without any other certainty whatever.

Suppoſe the Norfolk plow, for inſtance, to be tranſported one hundred miles,—and the charges of a man, a horſe, and a light cart, to be from ſixpence to a ſhilling a mile,—the expence,—to a large occupier, in a country where a ſandy ſoil, free from obſtructions, and with an abſorbent ſubſoil, is worked by three horſes at length with a driver,—would not be an object *. Plowing with two horſes without a driver, inſtead of three with a driver, is, perhaps, the greateſt ſaving which can be introduced upon a farm: and, for the ſoil abovementioned, it would be difficult to conſtruct a better plow than that which is now, and has been time immemorial, in common uſe in Norfolk.

If I were to hazard an improvement of the Norfolk plow, it would be the addition of another handle; and to change the practice of driving with a whip (to my mind a very aukward buſineſs) to that of driving with whip-

* In theſe days of ſpirited improvements in huſbandry, when fifty to a hundred guineas are given for one year's ride of a ram, five pounds for the introduction of a uſeful implement cannot be deemed extravagant.

reins,

reins, in the Yorkſhire manner; a practice, the excellency of which I have myſelf experienced, in different Diſtricts.

The Norfolk rein is one continued "line" paſſing from the bridle of one horſe, through a ſtaple fixed on the underſide of the handle of the plow, to the bit of the other horſe; the plowman holding his plow with the left hand, and carrying a ſhort whip in his right. In difficult work the right hand, whip-and-all, is applied to the handle of the plow; the plowman walking, in this caſe, in a poſture and with a gait, which, to a ſtranger, appears extremely aukward; and nothing, but the want of another handle, could render it ſufferable to the plowman himſelf.

The Norfolk line has, in ſetting out a freſh furrow, a ſeeming advantage over whip-reins. In this difficult work, at which the Norfolk plowmen are ſingularly expert, the looſe part of the line is gathered up in the right hand; ſo that the plowman has, with the ſmalleſt motion of his hand, one way or other, a perfect command of both horſes; but if, in this operation, he tie the two ends of the whip-reins together, letting the left-hand one ride beneath a pin,

a pin, or in a hook, placed under the handle for that purpoſe, the advantage of the Norfolk line is thereby fully obtained.

The Norfolk *harrow* is adapted to the ſoil—light and ſhort-tined.—Each harrow has its horſe:—that is, each horſe draws a ſeparate harrow;—three or four harrows being ſometimes drawn abreaſt, without being, as in other places, intimately connected together.

V. The roller of this country is very ſimple and *very light*. This, conſidering the nature of the ſoil, is extraordinary.

The farm-rollers, in general, have no ſhafts—perhaps only two looſe pieces of wood, about two feet and a half long, with a hole near one end, to receive the gudgeon of the roller, and a hook or eye at the other, to hook the trace to: ſometimes two rails are fixed in between the two end-pieces, framewiſe, with two hooks or ſtaples in the front rail to hook the horſe to.

In evidence of the lightneſs of the Norfolk roller, I do not recollect to have ſeen more than one horſe uſed in a common farm-roller; and this one horſe, beſides drawing the implement, has uſually carried the driver; it being the ſingular cuſtom of this country to

"ride

"ride at roll:" an employment, however, which generally falls to the ſhare of a young boy, or an old man.

Notwithſtanding the high degree of cultivation in which the lands of Norfolk are undoubtedly kept, no country perhaps has leſs variety of implements.

There is not perhaps a *drill*, a *horſe-hoe*, or ſcarcely a *horſe-rake*, in Eaſt-Norfolk. I ſaw one *ſpikey-roller* for the purpoſe of indenting the ſurface of a clover-lay once plowed for wheat (ſee the article WHEAT): but this, I believe, was never in common uſe.

There is, however, one implement, received into the Norfolk huſbandry, which is probably a Norfolk invention, and peculiar to the county: I have not met with it, at leaſt, out of this country:—I mean the

VI. SNOW-SLEDGE.—This beautifully ſimple implement is uſed for uncovering turneps buried under a deep ſnow. It is ſimply three deal or other boards, from one to two inches thick, ten or twelve inches deep, and ſeven to nine feet long, ſet upon their edges in the form of an equilateral triangle, and ſtrongly united, with nails or ſtraps of iron, at the angles; at one

of

of which is faſtened, by means of a double ſtrap, a hook or an eye, to hang the horſes to. This being drawn over a piece of turneps covered with ſnow, forces up the ſnow into a ridge on each ſide, while between the ridges a ſtripe of turneps is left bare; without having received any material injury from the operation.

VII. Timber-Carriages. Although timber-carriages may not, in ſtrictneſs, be ſaid to belong to huſbandry, a deſcription of them does not fall inaptly under the preſent head. They are in Norfolk, as in moſt other places, of two kinds: the four-wheeled carriage—provincially, a "drug;"—and the pair of wheels—provincially, "a gill."—The laſt is moſt in uſe; and of this only I mean to ſpeak:—not ſo much of its conſtruction, as of the manner of uſing it.

The conſtruction of the Norfolk gill is ſimilar to that of the timber-wheels of moſt other countries: namely, a pair of tall wheels, with a crooked axletree, ſurmounted by a block; to which axle is fixed a pair of ſhafts, or ſometimes a ſingle pole, only.

But the method of uſing them, here, is different from that which I have obſerved in other places; where the only uſe they are put to is

to raiſe the butt-end of a large timber to be drawn a ſhort diſtance; the top-end being ſuffered to drag behind upon the ground, to the injury of the turf, or the road, it is drawn upon.

In Norfolk, a large ſtick of timber, or perhaps three or four ſmaller ones, are entirely ſlung to the axle; ſo that, in drawing, no part of them whatever touches the ground; the top-end being generally drawn foremoſt, and the end toward the horſes always the heavieſt.

The method of taking up a piece of timber is this: the horſes being taken off, the wheels are run, by hand, aſtride the timber to be ſlung, until the axle is judged to be a few inches behind the balance-point: or, which is better, a chain is firſt put round the timber, and the wheels run up to it. It is difficult to aſcertain the exact place of fixing the chain, by the eye; nevertheleſs, a perſon accuſtomed to ſling timber in this manner, will come very near the truth. The chain hooked, and the axle brought into its proper ſituation, the ſhafts, or pole, is thrown back in the uſual manner; the chain carried over the block; brought round the pole; its end made faſt; and the ſhafts or pole

drawn

drawn down again by the horſes; by which means the timber is lifted from the ground, and ſuſpended to the axle.

If the required point of balance be not hit upon the firſt trial, the ſhafts are ſuffered to riſe again, the chain is unhooked, and ſhifted to its proper ſituation: the ſhafts being again pulled down, are bound, by an iron trace or ſmall chain, cloſe down to the timber; while another ſmall chain or trace is faſtened round the foremoſt end to hook the horſes to; *the team drawing by the timber, not by the pole or ſhafts.*

The utility of having a ſuperbalance of weight forward is twofold:—if the piece were ſlung in exact equilibrium, it would, upon the road, be in perpetual vibration; thereby rendering the pull unſteady, and extremely inconvenient to the horſes; whereas by throwing the balance forward, the traces are conſtantly kept down in their proper place, and the pull becomes uniform: if, however, too much weight were to be thrown forward, the draught of the horſes would not raiſe the point from the ground; the friction would, of courſe, increaſe the draught, and the road be at the ſame time

hurt.

hurt. It therefore follows, that the proper weight to be thrown forward is enough to prevent a vibration, but not ſo much as to prevent the point from being raiſed from the road by the draught of the horſes upon level ground.

The other advantage by a ſuperbalance forward, is gained in going down a hill; in which caſe, the draught not being wanted, the point, of courſe, falls to the ground, and ſerves as a pall to regulate the motion of the carriage: if the ſuperbalance alone be not ſufficient to check the too great rapidity of the motion, the driver adds his own weight. Likewiſe, if, in aſcending a hill, the balance be loſt; he, in like manner, ſeats himſelf upon the fore-part of the load, thereby keeping it down to its proper level.

This method of conveying timber may, it is poſſible, be in uſe in other Diſtricts; but I have not ſeen it practiſed any where except in Norfolk. I know it to be an excellent, but not a common practice: I have, therefore, been induced to give this deſcription of it.

TAXES.

10.

TAXES.

UNDER this head I ſhall claſs

Land-Tax,

Tithe,

Poors-Rates.

I. THE LAND-TAX, in this Diſtrict, runs at about eighteen-pence to two ſhillings upon the preſent rents.

II. TITHE. The Diſtrict is moſtly titheable; but tithe is here ſeldom taken in kind. The rents paid, in three principal pariſhes in this neighbourhood, are:

North-Walſham, about two ſhillings and nine-pence, rectorial; and one ſhilling, vicarial; an acre, all round.

South-Reps, about three ſhillings each acre of arable land, for rectorial and vicarial. This pariſh is allowed to be reaſonably rented. The rector reſides in the pariſh.

North-Reps, for great and ſmall, three ſhillings an acre all round; though much bad land in the pariſh.

N. B.

N. B. In *Rowton*, a ſmall pariſh of poor land, about two ſhillings for corn and fallow, two-and-ſixpence for clover and turneps, and one penny half-penny for each cow and calf, as a modus for meadow.

III. Poor's Rate. In the year 1782, and for ſome years preceding, the poor's rate of

North-Walſham was about five ſhillings and ſixpence upon the pound, rack-rent.

South-Reps, three ſhillings and ſixpence upon the rack-rent.

North-Reps, four ſhillings upon the ſame.

Rowton, three ſhillings upon the ſame.

Erpingham, (a conſiderable pariſh) three-and-ſixpence upon the ſame.

It muſt be obſerved, however, that the period under notice being in the war, the wives and families of militiamen were a principal cauſe of raiſing the poor's rates to the above high pitch.

II.

GENERAL MANAGEMENT OF ESTATES.

THE MANAGEMENT of landed eſtates, in this Diſtrict, is conducted on a plan, which is not generally known, and is ſeldom if ever executed, in other parts of the kingdom; where receiving, twice a year, by a plain rent-roll, is frequently the ſum of management.

Formerly, it was the invariable practice of the Diſtrict for landlords not only to build, but to repair: alſo to furniſh gates ready-made; plant and cut hedges; and even repair the ditches of their tenants; reſerving to themſelves the hedge-wood; and, in effect, a degree of poſſeſſion of the buildings and fences; the tenant having, of courſe, only a partial poſſeſſion of the farm he rented. And the ſame ſyſtem of management, with ſome few alterations, prevails to the preſent time.

This

This renders the immediate ſuperintendency of a large eſtate in Norfolk a buſy and unbroken ſcene of employment. The ſummer-months are not more actively employed in attending to REPAIRS, than the winter-months are in the management of FENCES.

But theſe and other articles I ſhall conſider ſeparately; comprizing under the preſent head ſuch general matter, only, as neceſſarily occurs upon every leaſed eſtate.

I. TENANCY. *Tenants-at-will* are thinly ſcattered: LEASES, either for a *term*, or from *year-to-year*, are univerſal. *Leaſes for life* are rarely heard of in this Diſtrict.

II. TERM. The term, formerly, was twenty-one years; but the advance of produce which took place ſome years ago, producing, as it ever will do, an advance of rent, the tenant who had then juſt entered on a leaſe of twenty-one years became, for a ſeries of years, under-rented: the conſequence is, gentlemen, in general, refuſe to grant leaſes of longer term than fourteen years, and many curtailed them to ſeven years; a term, in my opinion, much too ſhort.

Articles from year-to-year are very prevalent, eſpecially among ſmaller tenants; and, in many reſpects, they are preferable to a ſhort term; which is a tie to both parties, without being, in general, advantageous to either.

Marling is the principal improvement of a Norfolk farm; but who would marl on a ſeven-years leaſe? Where much marling is to be done, fourten years is too ſhort a term;—and though landlords may once have felt the inconveniencies of twenty-one years leaſes, it is probable that tenants, who have of late years taken leaſes of that length, will, before their expiration, experience, in their turn, feelings of a ſimilar nature.

III. Rent. The medial rent of the Diſtrict may be laid at twelve ſhillings an acre: toward the North coaſt the ſoil is lighter and leſs productive than it is in more central parts of the Diſtrict; but on the Eaſtern coaſt and in the ſouthern Hundreds it is much more fertile, letting from eighteen to twenty ſhillings an acre.

In general, the Diſtrict is very highly rented: there are lands in the kingdom,—I will venture to ſay within twenty miles of the metropolis,—which lett at eight ſhillings an acre, yet are, in their

their nature equally fertile as thoſe of Norfolk, which let currently for ten to twelve ſhillings. Nothing can account for this but the ſuperiority of the Norfolk huſbandry; and the quick diſpatch which prevails in every department of the Norfolk ſyſtem of management.

IV. COVENANTS. Covenants of leaſes are, in Norfolk, as in other Diſtricts, various as leaſes themſelves: the particular circumſtances of an eſtate, and the ſpecial matter of agreement between landlord and tenant, will ever produce this variety, in a greater or leſs degree: nevertheleſs, every country has its natural covenants, and its prevailing faſhions, as to reſtrictions and indulgences.

Theſe faſhions, however, alter; and an improvement has recently taken place, upon ſome of the firſt eſtates in Norfolk, with reſpect to the REPAIRS of buildings and fences; the tenant now covenanting to pay half the workmen's wages. This has two valuable effects:—the tenant thereby pays a ſtricter attention to the workmen employed; and becomes more careful of thoſe things which, heretofore, he had no intereſt in preſerving.

V. No department of the management of an eſtate gives more uneaſineſs to both landlord and tenant than do REMOVALS, or exchanges of tenants; and every covenant which facilitates this unpleaſant buſineſs is valuable. The ſhifting of tenants is no where conducted with greater eaſe than in Norfolk; where, it is probable, leaſes have been long in uſe; and where removals from farm to farm are become familiar.

VI. THE TIME OF RECEIVING RENTS, in Norfolk, is, pretty generally, Chriſtmas and Midſummer; landlords giving their tenants three months credit. Chriſtmas, however, is of all others the worſt time of the year for this purpoſe: many ſerious evils ariſe from it (ſee MIN. 47, on this ſubject). The firſt of March and the firſt of June appear to be the moſt eligible rent-days in Norfolk.

VII. The following HEADS OF A LEASE will place the general management of a Norfolk eſtate in a clear and comprehenſive point of view.

They are not, either in form or ſubſtance, copied, preciſely, from the leaſe in uſe upon any particular eſtate; but exhibit, I believe, a

pretty

pretty faithful outline of the modern Norfolk leaſe.

LANDLORD AGREES, 1. to lett, certain ſpecified premiſes, for a term, and at a rent, previouſly agreed upon.

2. ALSO to put the buildings, gates, and fences in tenantable repair.

3. ALSO to furniſh rough materials, and pay half the workmen's wages in keeping them in repair, during the term of the demiſe; wilful or negligent damage excepted.

4. ALSO to furniſh the premiſes with ſuch ladders as may be wanted in doing repairs, or in preſerving the buildings, in caſe of high wind, fire in chimneys, &c. (an excellent clauſe).

5. ALSO to furniſh rough materials for keeping the gates, gate-poſts, ſtyles, &c. &c. in repair; or to furniſh the materials ready cut out; tenant paying the uſual price of labour for cutting out.

6. ALSO to pay half the expence of ſuch ſhores and ditches as he, or his agent, ſhall direct to be made or renewed.

LANDLORD RESERVES, 1. all minerals, foſſils, marls, clays; with liberty to work mines,

quarries and pits, and to burn lime and bricks upon the premiſes; likewiſe, to carry away ſuch minerals, &c. &c.; excepting ſuch marl, or clay, as may be wanted for the improvement of the farm.

2. Also, all timber-trees, and other trees and woods, underwood *and hedgewood*; with liberty to fell, convert, char, and carry off ſuch timber, or other woods; excepting ſuch thorns and buſhes as ſhall be ſet out by landlord, for making and repairing fences; provided the thorns, &c. ſo ſet out be cut in the winter months; excepting, however, out of this proviſo, ſuch few as may be wanted in the courſe of the ſummer-months, for ſtopping accidental gaps.

3. Also, full liberty of planting timber-trees in hedges, or on hedge-banks; with a power to take to himſelf, after twelve months notice given, ſome certain number of acres of land for the purpoſe of raiſing timber-trees, other trees, or underwood; allowing the tenant ſuch yearly rent, &c. for the land ſo taken, as two arbitrators ſhall fix.

4. Also, a power of altering roads, and of incloſing commons, or waſte lands, without the

the controul of the tenant; to which intent, all common-right is uſually reſerved, *in form*, though ſeldom *in effect*, to the landlord.

5. ALSO, the cuſtomary liberty to view buildings, do repairs, and, conſequently, to bring and lay materials.

6. LASTLY, the right of ſporting and deſtroying vermin.

TENANT AGREES, 1. to pay the ſtipulated rent half-yearly; and within thirty days after it be due; under forfeiture of the leaſe; and, further, to pay the laſt half-year's rent two months, or a longer time, before the expiration of the term.

2. ALSO, to do all carriage for repairs (within a ſpecified diſtance); AND to find all iron-work and nails; AND to furniſh wheat-ſtraw for thatching; AND to pay half the workmens' wages, and find them with ſmall-beer.

3. ALSO, to do all ditching, &c. ſet out by landlord (provided the quantity ſet out do not exceed one-tenth of the whole); AND to pay half the workmen's wages, and find them in ſmall-beer; AND to defend with hurdles or otherwiſe, all ſuch young hedges as ſhall be

ex-

expoſed, in ſpring and ſummer, to the browzings of paſturing-ſtock.

4. Also, to make, or pay for making, ſuch gates, &c. as ſhall be wanted upon the farm during the term of the demiſe; and to hew, or to pay for hewing, all neceſſary gate-poſts; and to put down and hang, in a workman-like manner, ſuch gates and gate-poſts, at his own ſole expence; as well as keep all the old gates on the premiſes in tenantable repair.

5. Also, not to aſſign over, nor, in any other way, part with poſſeſſion of his farm; but to make it his conſtant reſidence during the term of the leaſe. Nor to take any other farm; nor to purchaſe any lands adjoining, or intermixed with it; without the licence and conſent of landlord; under forfeiture of the leaſe.

6. Also, not to break up any meadow, paſture, or furze-ground, under the penalty of ten pounds an acre a year. Nor to cut "flags," that is, turves, under fifty ſhillings a hundred.

7. Also, not to lop or top any timber-tree, under the penalty of twenty pounds: nor

other

other tree, under ten pounds: NOR cut underwood or hedgewood (except as before excepted) under ten pounds a load. But, on the contrary, to preſerve them from damage as much as may be; and, if damaged by others, to give every information in his power, under the penalty of twenty pounds.

8. ALSO not to take more than two crops of corn without a whole year's fallow,—a crop of turneps twice-hoed,—or a two years lay,—intervening, under the penalty of ——.

9. ALSO to conſume on the premiſes all hay, ſtraw, and other ſtover; and not to carry off, or ſuffer to be carried off, any part, under pretence of being tithe compounded for, or under any other pretence whatever, under the penalty of ten pounds, for every load carried off.

10. NOR to carry off, nor ſuffer to be carried off, any dung, muck, &c. under five pounds a load.

11. NOR to impair the foundations of the buildings round the dung-yard, by ſcooping out the bottom of the yard too near the buildings; but to keep up a pathway three feet wide

wide between the dung-pit and the foundations (an excellent clauſe).

12. ALSO, not to ſtock any part of the premiſes with rabbits; but to endeavour, as much as may be, to deſtroy them.

13. ALSO, *during the laſt two years of the leaſe*, not to take in any agiſtment ſtock.

14. ALSO, *in the laſt year*, not to ſuffer ſwine to go looſe without being yoked and rung.

15. ALSO, *in the laſt year*, to permit landlord, or in-coming tenant, to ſow graſs-ſeeds over the ſummer-corn; AND to harrow them in, gratis; AND not to feed off the young graſſes after harveſt.

16. ALSO, *in the laſt year*, not to ſow leſs than —— acres of fallow, of, at leaſt, three plowings and ſuitable harrowings, with two pints an acre of good, marketable, white-loaf turnep-ſeed; AND, in due time, to give the plants two hoeings (*or, if the crop miſs, to give the fallow two extra plowings*) in a huſband-like manner; AND, at the expiration of the term, to leave ſuch turneps growing on the premiſes; free from wilful or neglectful injury;

injury; under the penalty of —— pounds an acre.

17. ALSO, to permit landlord or in-coming tenant to begin, on or after the firſt day of July, *in the laſt year*, to break up the two years lay (hereafter agreed to be left) for wheat fallow, or any other purpoſe; AND to harrow, ſtir, and work the ſaid fallows; AND to carry and ſpread dung or other manure thereon, without moleſtation.

18. ALSO, *in the laſt year*, to permit landlord, or in-coming tenant, to lay up hay, or other fodder, on the premiſes, and to protect it thereon.

19. ALSO to lay up and leave upon the premiſes, *at the expiration of the leaſe*, all the hay of the laſt year (or of any preceding year, if unconſumed at the expiration of the term) except —— loads, which tenant is allowed to carry off.

20. ALSO to lay up, in the uſual barns and rick yards, the laſt year's crops of corn; together with the tithe, if compounded for; AND to thraſh them out, *in proper ſeaſon*; and in ſuch manner that the ſtraw, chaff, and colder ſhall be injured as little as may be.

2. ALSO,

21. ALSO, *at the expiration of the term*, to leave not leſs than ——— acres of olland of two years laying (including that which may have been broken up by landlord or in-coming tenant) and which ſhall have been laid down in a huſband-like manner, after turneps or a ſummer fallow, and with not leſs than twelve pounds of clover, and half a peck of rye-graſs, ſeeds an acre—under the penalty of —— pound an acre. ALSO not leſs than —— acres of olland of one year's laying, to be laid down as above ſpecified, under the penalty of —— pound an acre.

22. ALSO, *at the expiration of the term*; to leave all the yard-manure, produced in the laſt year of the leaſe, piled up in a huſband-like manner, on the premiſes; excepting ſuch part of it as may have been uſed for the turnep-crop; and excepting ſuch other part as may have been uſed by landlord, or in-coming tenant, for wheat.

23. ALSO, *at the expiration of the term*; to leave the buildings, ladders, gates, fences, water-courſes, &c. &c. in good and tenantable repair; landlord in this, as in every other caſe, performing his part as above agreed to *.

* ALSO, upon ſuch parts of an eſtate as lie near the reſidence of the owner, it is cuſtomary for the tenant to agree

to

TENANT TO BE ALLOWED, 1. the full value of all the hay left upon the premiſes, of the laſt year's growth, or of the growth of any preceding year; provided the quantity of old hay do not exceed —— loads.

2. ALSO the full value of the turneps left on the premiſes; or the accuſtomed price for the plowings, harrowings, and manuring; at his own option.

3. ALSO, the feedage of the lays broken up, by the landlord or the in-coming tenant, from the time of their being broken up until the expiration of the term the enſuing Michaelmas; ALSO, for all damage ariſing in carrying on manure or otherwiſe.

4. ALSO, the feedage of the young clovers, from harveſt to Michalmas.

5. ALSO, the uſe of the barns and rick-yards for ſummer-corn until May-day; and for winter-corn until the firſt of July next enſuing.

to furniſh, annually, a certain number of loads of ſtraw, according to the ſize of his farm; ALSO to do the carriage of a certain number of loads of coals; ALSO to keep dogs, warn off ſportſmen, and ſuffer them to be proſecuted in his name: Remnants, theſe, of the ancient baſe tenures of ſoccage and villanage.

21. ALSO,

6. ALSO, (by way of a conſideration for the ſtover) the cuſtomary price for thraſhing and dreſſing the corn; the landlord, or in-coming tenant, ALSO carrying the ſame to market, gratis: provided the diſtance required to be carried does not exceed —— miles, and the quantity required to be carried, at one journey, be not leſs than —— coombs.

All the above ALLOWANCES to be referred to two arbitrators; one to be choſen by each party, in Michaelmas-week; and the amount awarded to be immediately paid down by the landlord, or the in-coming tenant.

For the method of conducting *exchanges of intermixed lands*, in Norfolk, ſee MIN. 4.

For the *time of receiving rents*, ſee MIN. 47.

For the operation of a *riſe of rent*, ſee MIN. 58.

For an inſtance of IMPROVEMENT by *rabbit-warren*, ſee MIN. 79.

For inſtance of IMPROVEMENT by *building-leaſes*, ſee MIN. 106.

For an IMPROVEMENT by *incloſure*, ſee MIN. 137.

Note. Beſides the above particulars, reſpecting the general management of eſtates, I find myſelf poſſeſſed of a variety of others, on the more immediate connection between landlord and tenant; but they cannot, with ſtrict propriety, be publiſhed in the preſent volumes.

12.

BUILDINGS and REPAIRS.

THE FARMERIES of Norfolk are, in general, large and convenient. Many of them have been the reſidencies of that yeomanry, which, as has been already obſerved, is now nearly extinct.

I. THE DWELLING-HOUSE, in general, is commodious: kitchen and "back-houſe;" parlour; and, on the larger farms, a "keeping-room," in which the maſter and his family ſit apart from the ſervants.

II. THE BARNS of Norfolk are ſuperior to thoſe of every other county; numerous and ſpacious. No farm has leſs than three thraſhing-floors; ſome farms five or ſix, and theſe of unuſual dimenſions. Twenty-four feet by eighteen is conſidered as a well-ſized floor; twenty by fifteen, a ſmall one. Indeed, a floor of leſs dimenſions is ill adapted to the Norfolk method of cleaning corn; which is univerſally effected by caſting it with ſhovels from one end

of the floor to the other. To obtain this neceſſary length of floor, a porch, on one or both ſides of the barn, is almoſt univerſal. A lean-to porch, with double doors to let out an empty waggon, and with a range of lean-to ſheds or hovels on either ſide, continuing the roof of the barn, without a break to the eaves of the porch and ſheds, is at preſent, deſervedly, in good eſtimation.

III. BARN-FLOORS are of plank, "lumps" (a kind of bricks), or clay: the laſt are moſt prevalent; and altho' they be conſidered as inferior to the firſt, they are in better eſteem in Norfolk than in moſt other places; for a Norfolk farmer is aware that what he loſes by the *handle* of his corn, thraſhed on a clay floor, he regains by *meaſure*; for the ſame duſt which gives the roughneſs of handle in the ſample, prevents the corn, thus ſoiled by the clay's beating up, from ſettling ſo cloſe in the buſhel as that which has been thraſhed on a clean wooden floor.

IV. THE STABLES are no way peculiar; except in their having, in general, a "hay-houſe" adjoining to them, inſtead of a hay-chamber

over

over them; a cuſtom which is at once waſteful both of hay and houſe-room: at preſent, however, it is the practice to raiſe ſtables high enough to admit of hay-chambers over them; with floors, not of boards, but of clay; which is cheaper, and, in other reſpects, much preferable to board floors.

V. Cow-houses are unknown in a Norfolk farmery: a ſmall "ſuckling-place" and a "calves-houſe" are the only out-buildings appropriated to cattle: except

VI. Bullock-sheds, which are ſometimes (but not generally) erected; more eſpecially in the ſouthern Hundreds of this Diſtrict. See Min. 118.

VII. The hogsty of Norfolk is ſingular; tho' not particularly excellent: inſtead of creeping into a pigſty, in the manner uſually done, a Norfolk farmer walks into his "pig-houſe," at a door ſimilar to thoſe of his other outbuildings: the building is of courſe higher and more expenſive, but certainly more commodious, than in the uſual form.

VIII. Granaries are few: I ſaw none upon ſeparate pillars; and but very few over

IX. WAGGON-SHEDS. Theſe in general are commodious. I met with a CART-SHED on an admirable plan. The width equal to the cart and ſhafts; open in front; with a bank of earth on the back part, about eighteen inches high, and of ſuch a width as juſt to take the wheels before the tail of the cart reach the back of the ſhed: the cart is backed in, the horſe taken out, and the cart ſuffered to tilt: the bank receives the tail, while the ſhafts riſe under the eaves of the front—dry,—and out of the way of cattle: the horſe is put in with equal facility: the back band, which remains faſt at both ends, is entered into the groove of the ſaddle, and the ſhafts pulled down.

X. RICK-YARDS in general are ſmall, owing to the capaciouſneſs of the barns. It is pretty common, and very convenient, to have a rick frame at one or both ends of the barn, with a pitching-hole, in at which the corn is houſed, without the aſſiſtance of team-labour. Sometimes theſe ſtacking-places at the ends of barns are incloſed, without having a frame for the ſtack; which being houſed immediately after the firſt clearing of the barn, the incloſure afterwards

terwards makes an admirable fold-yard for calves or yearling cattle.

XI. FOLD-YARDS—provincially, "par-yards" in general, are warm and ſnug: the outer fence is moſtly "battoned;" namely, made with poſts, and three or four wide ſtrong rails, or "battons;" an inch to one inch and a half thick, and eight or nine inches wide; the lower ones being placed cloſe enough for an effectual fence againſt ſwine. Theſe in autumn are ſometimes lined with tall thorn-faggots, eſpecially on the bleaker ſides. The area is *parted* into ſeparate yards with common poſts and rails, to which ſimilar faggots (provincially, "kidds") are faſtened: this, at a ſmall expence, keeps the different ſpecies of ſtock ſeparate, and renders their apartments comfortable.

XII. DRINKING-PITS, notwithſtanding the abſorbency of the Norfolk ſoil, are common to moſt farm-yards. It ſeems probable that they have, formerly, been made by art, and with much judgment; as in general they retain the water very perfectly. At preſent, however, the art, if known, is out of uſe: indeed the RIVU-

LETS which abound in ſo ſingular a manner in Norfolk, preclude, in ſome meaſure, the uſe of artificial watering-places, except in or near farm-yards: beſides, WELLS, in general, are ſo ſhallow, and their water ſo excellent, that both of them might, without extreme inconvenience, be diſpenſed with.

THE BUILDING-MATERIALS of Norfolk are,

1. BRICKS, which are here manufactured with great ſkill. The materials are good: the ſubſoil, in many places, is naturally a very fine brick earth, without any admixture being required.

Beſides the common *red* brick, of which the buildings of a farm are generally conſtructed, Norfolk is celebrated for an admirable *white*, or rather STONE-COLOURED BRICK, which, except on a near view, has all the effect of a well-coloured ſtone. Of this brick the firſt houſes in the county are built: for ſo expert are the moulders of this excellent material, that cornices and even columns, with their pedeſtals and capitals, are formed of it.

This ſuperiority in brick-making is, however, one of thoſe efforts of neceſſity, which are frequently productive of excellency in invention: there is not, generally ſpeaking, a

ſtone

ſtone in the county; excepting a few flints, thinly ſcattered among the ſoil; and excepting the *ſea-ſtone*; which, near the coaſt, is uſed inſtead of bricks.

2. SEA-STONES, however, are, in unſkilful hands, a dangerous material to build with; for, being globular, their own weight, if the wall be high and run up haſtily, is ſufficient to cruſh it to the ground: and, when carried up deliberately, if the lime be bad, or the mortar injudiciouſly made, ſea-ſtone-walls are liable to part; having nothing but the mortar to bind them together. Their durability is their beſt recommendation; for, though the wall decay, the ſtones ſtill are there; and it is highly probable that many of the ſtones which were uſed in the firſt buildings of that material are ſtill in uſe. When they are found among ruins, upon or near the ſite to be built upon, they may, if ſkilfully ſet (and eſpecially if the quoins and jams be carried up with bricks), be a very eligible building-material.

Weather-boarding is made little uſe of in Norfolk;—in ordinary buildings, *clay-daubing* ſometimes is uſed as a ſubſtitute.

3. With reſpect to the materials of the HOUSE-CARPENTER, *oak* is generally uſed for door and

window-frames; alſo for wall-plates and ſills of every kind, and for beams, when it can be had. But in a country where the growth of oak is confined, in a great meaſure, to the hedge-rows, it cannot be expected that a full ſupply can be ſpared for building. *Aſh* and *elm* are uſed as ſubſtitutes; and, in a maritime country, *foreign timber* is had at a reaſonable price.

4. COVERINGS are principally of *pan-tile* or of *reed*;—many *ſtraw* roofs remain; but, at preſent, few new ones are put on.

REED is, at preſent, the favourite roof; and is of all others (good ſlate excepted) the moſt eligible for farm-buildings. A reed-roof, properly laid, will lie fifty years without touching; and thirty or forty more, with only adjuſting ("driving") it, and levelling the hollows with a little freſh reed. At an hundred years old it may be relaid; and will then, if laid upon the upper parts of the roof, laſt through a conſiderable part of another century.

It is principally cut from the margins of the "broads;" and is carried, perhaps, forty or fifty miles into the central and northern parts of the county.

A covering of reed is, in the firſt inſtance, coſtly: but when its durability, and the high degree of preſervation in which it keeps the roof are taken into the account, it is of all others the cheapeſt covering; beſides its being, whether in the extreme of heat or cold, the moſt comfortable.

The price of reed, in the place of its growth, is from three pounds to three guineas a hundred; containing ſix ſcore fathom; each fathom (compoſed of five or ſix ſheaves) meaſuring ſix feet in circumference. A hundred of reed will cover five ſquares of roof: the laying is a halfpenny a yard, or four ſhillings and twopence a ſquare; and the tar-rope and rods for faſtening it on, coſt eighteenpence a ſquare: ſo that a covering of new reed coſts about eighteen ſhillings a ſquare, containing one hundred ſquare feet; beſides carriage, and what is called "roofing;" namely, a cap of wheat-ſtraw placed upon the ridge, in a ſomewhat ſimilar manner, and for the ſame purpoſe, as ridge-tiles are put on.

This capping, which is done in a moſt effectual, but in a tedious and expenſive, manner, coſts in materials and workmanſhip about

ſixteen

ſixteen-pence each foot in length; which, upon a roof of ſixteen feet and a half ſpar, is an additional expence of four ſhillings each ſquare of reeding.

The carriage is in proportion to the diſtance. Taking twenty miles as a medium diſtance; and one ſhilling a mile as a medium price; the expence is twenty ſhillings a "load" of ſixty fathom, or forty ſhillings a hundred; which laying five ſquares is a further addition of eight ſhillings a ſquare: therefore the whole expence of a covering of reed fetched twenty miles may be laid at thirty ſhillings a ſquare *.

I am the more minute on this head, as I ſee this valuable material entirely neglected, as a covering for buildings, in moſt parts of the kingdom.

5. THE FLOORING-MATERIALS of this Diſtrict are, for upper-floors, *deal*, *aſh*, *elm*, and *poplar* boards: ſometimes *clay* is uſed for cottages, and for common garrets; but, for the ground-floor, *ſquare bricks*,——paving-tiles——provincially, "pavements"—are, in farm-houſes, the almoſt univerſal flooring: even the beſt rooms, of the

* For the method of laying reed and ſetting on the roofing, ſee MIN. 32.

firſt

firſt farm-houſe, are generally laid with this material; which is manufactured in an excellent manner, of various colours, and of various dimenſions, from nine inches to eighteen inches ſquare. Two pavements of the laſt dimenſion make, for a common room, an excellent HEARTH.

6. LIME is made from marl, entirely; this Diſtrict affording neither limeſtone nor chalk: Weſt Norfolk, however, abounds with a ſpecies of hard foſſil—provincially, "caulk"—a kind of hard chalk—from which lime of a tolerably good quality is burnt. See MANURE, p. 26.

Lime is univerſally *burnt* with *coals*, and generally in *drawing-kilns:* it coſts from ſeven to eight ſhillings a chaldron (more or leſs according to the diſtance of the carriage of the coals), and is ſold for nine ſhillings to ten ſhillings a chaldron*.

Bricks are burnt principally in *kilns*; few in *clamps:* the bottom of the kiln is always ſet with bricks; while the upper parts are occaſionally filled with tiles, pavements, and other ware.

For

* 1782. *Oct.* 26. Four chaldron and a half of coals (thirty-ſix buſhels) burned thirty-four chaldron thirty buſhels of lime

For the *price of building-materials*, &c. ſee LIST OF RATES.

For the method, and expence, of making *hay-chamber-floors* with clay, ſee MIN. 15.

For obſervations on the coping of *gables*, ſee MIN. 25.

For the method of *laying reed*, and ſetting on ridge-caps, ſee MIN. 32.

For the method of *laying pantiles* on reed, &c. ſee MIN. 33.

For obſervations on *check-beams* acroſs barn-floors, ſee MIN. 35.

lime (thirty-two buſhels). In general, however, thirty-two chaldron is the produce of that quantity: this is ſomewhat more than *ſeven* chaldron of lime to a chaldron of *ſea*-coals.

One chaldron of coals and carriage four miles	1	17	6
Labour, at twenty-pence a chaldron of lime, -	0	11	8
Horſe and cart for moving marl, - -	0	1	0
	£2	10	2
Seven chaldron, at ſeven ſhillings and two-pence a chaldron, - - -	£2	10	2

I have known a quantity ſold, for manure, at eight ſhillings a chaldron.

The chalk of Swaffham yields about *five* chaldron of lime (thirty-two buſhels) to one chaldron of *ſea*-coals (of thirty-ſix buſhels)

For

For obſervations on the utility of *laying tiles on mortar*, ſee MIN. 48.

For obſervations on *buttreſſes*, ſee MIN. 60.

For obſervations on the *general management* of repairs, ſee MIN. 64.

For the effects of a *high wind*, ſee MIN. 91.

For general obſervations on the *reſidence of workmen*, ſee MIN. 92.

For deſcription of a *farm yard* in Fleg, ſee MIN. 106.

For obſervations on *farm-yard walls*, ſee MIN. 115.

For obſervations on *ſea-ſtone walls*, ſee M. 116.

For the deſcription of a *bullock-ſhed* in Blowfield Hundred, ſee MIN. 118.

For the method of building a hog-ciſtern, ſee MIN. 131.

13.

GATES and DEAD FENCES.

IT has already been mentioned as a practice of Norfolk, for landlords to furniſh their tenants with GATES ready-made.

This, when an eſtate is intended to be made the moſt of, and where the tenants, being under leaſe, have no right to expect other indulgences than the leaſe gives them, is a good practice; for when rough timber is allowed, even though it be ſet out, a deſigning tenant will generally get the advantage, let the eſtate be ever ſo well looked after.

It is reaſonable, however, and is, now, on ſome eſtates cuſtomary, in this caſe, to charge the tenant for ſawing and making up; alſo for hewing poſts; and for ſawing out ſuch parts of gates as are wanted for repairs; which, as well as putting down poſts and hanging new gates, is generally done at the expence of the tenant, who ſometimes, but not always, finds *gate-irons*.

It

It is a practice, not uncommon here, to drive hooks on both ſides the hanging-poſt; in order that the gate may be ſhifted to this or that ſide, as the paſturing-ſtock are ſhifted: and ſometimes I have ſeen two gates hung upon the ſame poſt; one on either ſide: a moſt effectual guard, when both ſides are in paſture.

The prevailing DEAD FENCE is *battoning* (ſee FOLD-YARD); the tenant being charged for hewing poſts and ſawing battons, in the ſame proportion he is for gates or gate-ſtuff; namely, the full expence of workmanſhip.

Even STILES are frequently provided, and charged for, in the ſame way, by landlords.

For an inſtance of *ivy* being ſerviceable to a *ſea-ſtone fence-wall*, ſee MIN. 9.

For general obſervations on *farm-yard fence-walls*, ſee MIN. 115.

For the method of ſetting a *furze-faggot fence*, ſee MIN. 135.

14.

LIVE HEDGES.

THE WOODLANDS of East Norfolk being few, UNDERWOOD, either in *woods* or in *coppices*, is in a manner unknown. The HEDGE-ROWS, alone, may be said to furnish the District with *timber*, *top-wood*, and *under-wood*.

Old hedges, in general, abound with oak, ash, and maple stubs, off which the wood is cut every time the hedge is felled; also with pollards, whose heads are another source of fire-wood; which, in a country where coals can be had only by sea, is of course sought after: yet it is a fact, as notorious as it is interesting, that East-Norfolk does not experience, to any degree of inconveniency, a want either of timber or firewood; although its entire supply may be said, with little latitude, to be from hedge-rows.

It is probably from this circumstance, that hedge-wood is suffered to stand to so great an

age

age and growth as it does in Norfolk. Twelve or fourteen years is conſidered as a moderate growth; twenty, and even thirty years it is ſometimes permitted to remain without cutting. The "ſtubwood," it is true, by this means acquires a degree of utility and bulkineſs; but the "thorns" are in the mean time over-hung and deſtroyed.

It appears by the HEADS OF A LEASE * that the top-wood, the ſtubwood, and the loppings of timber, if any, belong to the landlord. They are however, in general, of more value to the occupier of the land than to any other perſon; beſides the tenant having a degree of claim to the refuſal of them; and it is cuſtomary to ſell them to him at a moderate valuation.

I. THE METHOD OF VALUING HEDGEWOOD is as follows: the tenant having been conſulted; and the particular hedge or hedges to be felled, in any given ſeaſon, having been determined upon; each *top* is (or ought to be) valued and minuted ſeparately; carrying the *ſtubwood* in the eye until ſome certain quantity is gone by. But a readier method is, I am told, ſometimes practiſed; namely, that of walking by the ſide of the hedge without particularizing the indivi-

* Page 72.

duals; or, which is ſtill ſhorter, but ſtill leſs accurate—that of ſtanding at one end, and, by merely glancing the eye along it, putting down a random valuation.

II. But valuing the tops and ſtubwood, though done in the moſt accurate manner, is by no means all that is neceſſary to be done in ſetting out what is called "ditching:" every TIMBER-TREE, and every POLLARD, ſtanding in the hedge to be felled, ſhould be cautiouſly attended to.

The timbers which are going to decay, or which, to appearance, will receive injury before the next fall of the hedge, ſhould be *marked to come down:* if gate-poſts be wanted upon the farm, ſuch pollards as are fit for that purpoſe ſhould be ſet out; alſo all ſuch pollards as are already dead, or will not to appearance bear a top equal to their preſent value, before the next fall of the hedge, ought to be valued to the tenant as fire-wood.

III. Other very material things to be attended to, are the YOUNG OAKLINGS riſing among the hedge-wood; as well as the "STANDS," and the GROWING TIMBERS; which ought to be *pruned*, and *ſet up*, in ſuch a manner, as to give freedom to the hedge and the herbage growing under them;

and

and at the ſame time to encreaſe their own value, by giving them length and cleanneſs of ſtem.

This part of the buſineſs, however, ought not to be left to the ditchers; but ſhould be performed by ſkilful woodmen, ſent round for the purpoſe (ſee MIN. 5. on this ſubject).

It may be needleſs to add, that to go through this various buſineſs properly, paſſing once along the hedge is not ſufficient: the timbers, pollards, and timberlings ſhould firſt be inſpected, and, if requiſite, marked; by which means the quantity of fire-wood will be more fully aſcertained, and its valuation, by this double view, be rendered more accurate *.

* Leſt the reader ſhould think that I am here deviating from the plan of this part of the work, by entering into the didactic where deſcription only was neceſſary, more eſpecially as ſimilar directions are ſcattered in the Minutes; I beg leave to obſerve, that the ſubject appears to me to be of ſo much importance, and to have been ſo ſlightly, if at all, touched upon by writers, that it ought to be placed in every point of view which will throw freſh light upon it. And although I may, in another work, have treated very fully upon this ſubject, I nevertheleſs think it proper to detail, in this, the incidents and reflections which have ariſen, immediately, out of my practice and obſervation in Norfolk.

IV. THE TREATMENT OF OLD HEDGES. The hedge-wood being felled to the ſtub, and the pollards headed, the ditch is ſcoured to its original depth; the beſt of the ſoil being collected into heaps on the brink of the ditch for the uſe of the farmer, in bottoming his yard or his dung-heaps; and the remainder laid to the roots of the ſtubs, or formed into a bank behind them. On the top of the bank a bruſh-hedge is ſet as a guard to the back;—while ſometimes the bottom of the ditch is *pointed* (that is, narrowed to a point), or filled with thorns or other buſhes,—as a guard to the face of the young hedge.

The laſt, however, is ſeldom done, nor often requiſite; for the Norfolk huſbandmen are pretty obſervant in cutting thoſe hedges, in any given year, which face their wheat in that year; by which means the young hedge acquires four or five years growth before the incloſure, it is expoſed to, becomes a ſpring or ſummer paſture.

This is the uſual treatment of old *rough* hedges in which pollards and ſtubwood abound, and which conſtitute the principal part of the hedges of Eaſt-Norfolk.

There

There are, however, many *planted* hedges; ſome of them very old: of theſe, a two-fold treatment prevails: namely, that above-deſcribed; and another, leſs eligible, called "buckſtalling;" which is cutting off the hedge-wood about two feet above the top of the bank, and "out-holling," that is, ſcouring out the ditch for manure; without returning any part of the ſoil to the roots of the hedge-wood. But by a repetition of theſe bad practices, the hedges, ſituated as they are in Norfolk, near the top of an artificial bank, with a deep ditch beneath them, are at length left deſtitute of mould to nouriſh and ſupport them, dwindling away, ſtub after ſtub, until they are no longer adequate as fences.

The practice of *plaſhing*, or laying hedges, is, in a great degree, unknown in this Diſtrict. —Workmen, from countries where this is a favourite and common practice, have been employed by gentlemen in this Diſtrict; but the ſucceſs has been ſuch as has rendered thoſe to whom it has become known, inveterate enemies to the practice.

The unpardonable cuſtom of hacking off the ſide-boughs of tall hedges, leaving the

tops to over-hang the young ſhoots, is here too prevalent. But ſuffering the ſoil to be waſhed away from the roots, is not more deſtructive to a hedge than is this vile practice.

If "kid" and "oven-fuel" be wanted, let a hedge which is full-grown be felled to the ſtub. There is ſcarcely a farm in the Diſtrict which is not more or leſs "wood-bound;" that is, injured by overgrown hedges; which are, year after year, receiving irreparable damage for want of cutting; while the undergrown ones are damaged by a leſs pardonable treatment.

The tenant's motive is founded in ſelf-intereſt: he gets fuel and "manner," without any contingent expence or trouble;—and whether the hedge endure, henceforward, for one or for two centuries, is not an object to him. But as, at the expiration of his leaſe, his farm will be worth more or leſs, according to the ſtate of its fences, it ought to be the eſpecial care of the landlord, or of his agent, to ſee that they are properly treated.

V. THE METHOD OF RAISING NEW HEDGES in Norfolk is a cheap one; and may be practiſed in

in any country where the ſoil is free from ſtones, and other obſtructions of the ſpade.

The hedgling is defended on one ſide by a deep ditch, while the other ſide is ſufficiently guarded by the excavated mould formed into a mound, and creſted with a ſtout bruſh-hedge; in the ſetting of which the Norfolk labourers, from conſtant practice, are very proficient.

It is a ſtriking, and indeed an intereſting fact, that hedges in Norfolk are raiſed with good ſucceſs, although neither poſt, rail, ſtake or edder be made uſe of in defending them. —And it may be a moot point, whether a want of underwood has given riſe to this, as a practice of neceſſity; or whether the practice, by rendering coppices leſs valuable, has been a means of doing away, ſo completely, the woodineſs of this Diſtrict.

But notwithſtanding much praiſe is due to the Norfolk method of defending young hedges, the mode of planting, here in common uſe, is very reprehenſible. Inſtead of the quickſets—provincially, "layer"—being planted in or near the ſoil which is to ſupport it, they are laid in near the top of the bank—perhaps,

two feet above the natural level of the adjoining incloſure—and probably five feet above the bottom of the ditch: nor are they, there, planted with their roots downward, in the manner which nature dictates; but with their heads pointing into the ditch: and, to complete the abſurdity of the buſineſs, the workman, in dreſſing the face of the bank, frequently draws the back of his ſpade downward over the tops of the plants, preſſing them, of courſe, flat to the face, in which they not unfrequently ſtick! yet, he ſays, he thereby does no harm: and it is poſſible he may be right; but, to a perſon who has ſeen any other method of proceeding, he appears to be doing very wrong.

Nevertheleſs, it is ſurprizing to ſee the progreſs which quick, thus planted, will ſometimes make the firſt two or three years after planting: and this, probably, is the falſe light by which the advocates for the method are led away. The top of the bank is looſe *made ground*, and the upright bruſh-hedge, by collecting driving rains, ſupplies it amply with moiſture. But the ſame rains not unfrequently aſſiſt in waſhing down the face of the bank, together

with

with the quick, into the bottom of the ditch. Even the ordinary mouldering of the bank, by froſts and moderate rains, leaves, in the courſe of a few years, the roots entirely expoſed. Should the plants preſerve their upright poſture, they ſoon loſe their vigour; but it is no uncommon thing to ſee them hanging, perhaps by one fibre, with their heads downward againſt the face of the bank. Conſequently, hedges which have been planted in this manner are full of dead gaps; and the plants which have ſurvived and have got down to the natural ſoil are, by the crowns of their roots being conſtantly expoſed, ſtinted and unhealthy. Whoever will be at the trouble of making the obſervation, will find, that the full-ſtemmed luxuriant hedges, which occur, more or leſs, in every part of the Diſtrict, (the Norfolk ſoil being naturally affected by the hawthorn) but more particularly in the Fleg Hundreds, have been planted at or near the foot of the bank.

The reaſon why a hedge planted low *in the face* of the bank, does not flouriſh for a few years after planting is obvious: the bank being ſteep, and without a break from top to bottom, it ſhoots off the rain-water, which falls againſt it,

into

into the ditch; while that collected by the dead hedge, above, is not ſufficient to moiſten it to the bottom; which is, of courſe, deprived of the benefit of rain-water. Beſides this want of moiſture, the ſuperincumbent weight of the bank is inimical to the tender fibrils of the young plants; and their progreſs, ſo long as they remain confined under the bank, and cramped with its preſſure, is of courſe ſlow.

But this difficulty once overcome; the roots having once reached through the bank, and got poſſeſſion of the adjoining incloſure; the plants flouriſh amain; while their principal roots being firmly and cooly ſituated, they continue to flouriſh, even in defiance of "buckſtalling" and "out-holling."

It is not my deſire to cenſure the practices of Norfolk huſbandmen; much leſs my intention to aim generally, at their inſtruction: I rather hope to diſſeminate over the Iſland the excellencies of their management: nevertheleſs, Norfolk, as every other Diſtrict I have yet viſited, has its prejudices, and its want of *perfection*, in particular departments of management. It may however be ſaid, and I believe with ſtrict juſtice, that no Diſtrict has *fewer* imperfections than

than Norfolk; and what is ſingularly to the credit of the Norfolk huſbandmen, their perſeverance in practiſing the method of planting hedges above deſcribed, may perhaps be called their only *rooted* prejudice.

The reaſon why quick, recently planted, at the foot, *and in the face*, of a tall bank, is checked in its growth, for the firſt two or three years, is not more obvious than the method of preventing it. If inſtead of laying-in the plants in the immediate face of an unbroken bank, they were to be planted on the back-part of an *offset*, or break in the bank, the evil effects abovementioned would be removed: for, by this ſimple alteration in the formation of the bank, the young plants become ſupplied, at once, with every thing neceſſary to their ſupport; namely, moiſture, air, and looſe earth for the infant roots to ſtrike in.

This is not merely a theoretic plan: it is in common practice in many parts of the kingdom; and I have myſelf practiſed it, in three different and diſtant parts of it, with ſucceſs.

In Norfolk however, where hares are vermin, ſome caution is neceſſary: the ſhelf ſhould not be made too wide; and ſhould, while the

the plants are young, be kept ſtuck with buſhes, to prevent the hares from running along it.

The ſize of the ditch is from three to five feet wide—and two to three and half feet deep; the medium, four feet wide and three feet deep, with a bank three feet high, forming what is called "a ſix-foot dick." For an out-ſide fence againſt a common or a road, five feet wide and ſeven feet high, (meaſuring from the bottom of the ditch to the top of the bank when freſh-made) is a more ſuitable fence.

The price of a common ſix-foot ditch is four-teen-pence a rod (of ſeven yards), or one ſhilling a rod and beer, for making the ditch, planting the layer, adjuſting the bank, and ſetting the hedge.

The mean diſtance of planting quick is about ſix inches: the calculation is a hundred to three rods; the price four-pence to ſix-pence a hundred.

Thus, *the whole expence* of planting a quick-hedge in Norfolk is not two-pence half-penny a yard; while in many parts of the kingdom, where two rows of poſts and rails are in common uſe, eight-pence to one ſhilling a yard is the uſual expenditure.

At preſent, it is a practice, though perhaps not of long ſtanding, to ſow *furze-ſeed* upon the top of the bank, as a guard ſucceſſive to the bruſh-hedge, and as a ſource of kid and fuel. The common way is to ſow it *upon* the back, at the foot of the dead hedge: this, however, is injudicious; for the furze being of a ſpreading nature it is liable, after the hedge is gone to decay, to over-run the quick. Many fine young hedges I have ſeen materially harmed through an injudicious management of the furze-hedge; which ought to ſtand *on the back*, not upon the top, of the bank; as in this ſituation it is a better guard to the bank (which is liable to be ſcraped down by cattle and ſheep), and leſs injurious to the hedge it is intended to defend. About two-thirds of the diſtance between the foot of the bank and the foot of the bruſh-hedge; namely, one-third of that ſpace from the foot of the hedge; is a good ſituation. But ſee MIN. 104, on this ſubject.

I met with one inſtance, and that in the practice of one of the firſt men in the county, of furze-ſeed being ſown on what is called the "out-holl,"

"out-holl," namely, the outer brink of the ditch.

This is a good guard to the face of the hedge: and, if the ſide towards the incloſure be kept cut, to prevent their ſpreading into it, furzes, growing in this ſituation, become a ſupply of fuel, without being an incumbrance; a ditch being always conſidered as irretrievable waſte; and this is the firſt inſtance I have met with of its being rendered valuable by being *cropped*. If inſtead of ſowing the furze-ſeed on the brink, it were drilled on the ſlope of the ditch, there would be leſs danger of the plants encumbering the adjoining incloſure.

A principal inconveniency of the Norfolk mound-fence is the mouldering of the back of the bank, for the firſt two or three years after making or repairing; before it gets graſſed over.

To obviate this I have had *graſs-ſeeds* ſown, after the bank was raiſed, but before it was finiſhed, and the ſeeds dreſſed in with the back of the ſpade, in the finiſhing operation of the bank: the ſucceſs has been beyond expectation; in a few weeks the bank becomes green,

and

and the firſt year furniſhes a ſupply of uſeful herbage; inſtead of being, as it uſually is, a nurſery of wing-ſeeded weeds. The back of the bank in this caſe ſhould not be made too upright. The beſt ſeeds are thoſe of white clover (among which thoſe of rye-graſs or other graſſes may be mixed); for this plant, by running upon the ſurface, and ſtriking root at the joints, ſoon forms the requiſite matt of herbage.

VI. Replanting worn-out hedges. It will be doing juſtice to the Norfolk management to mention a practice, which at preſent prevails, of grubbing up old worn-out hedges, and planting new ones in their ſtead.

In this caſe the old hedge is (or ought to be) thrown down in autumn—that the ſoil may be thoroughly ſoaked and tempered with the winter's rains and froſts:—early in ſpring the foot of the bank ſhould be formed, and, in due ſeaſon, the layer put in, and the fence completed.

By this means a diſgraceful nuiſance is removed, and a new ſtraight hedge obtained; and this at a ſmall additional expence.—The roots alone, if the old hedge be full of large ſtubs, and loaded with ſtems,—will pay for grubbing:

grubbing: I have known one let to grub upon theſe terms. I have alſo known ſixpence a rod (of ſeven yards) beſides the roots given;—alſo, one ſhilling a rod and the ſmall roots.

The price of re-making—that is, ſcouring and banking up—an old ditch is nine-pence a rod and beer; ſo that the difference between re-making the old one and raiſing a new one is but three-pence a rod.

VII. GRUBBING THE BORDERS of old hedges, and turning up the leaves, rough graſs, and top-ſoil for manure, is much in practice; and provided too much ſoil be not carried away from the roots of the hedgewood, the practice is a good one. The unplowed ſlip on the ditch-ſide is, generally, when the ditch is ſcoured, treated in the ſame manner, and mixed with the ſhovellings of the ditch.

Theſe are practices, which, though valuable, are in many parts of the iſland entirely neglected; the borders, on both ſides, being left as nurſeries of weeds, whoſe ſeeds become a nuiſance, not only to the farm they grow on, but to its neighbourhood.

VIII. The HEDGE-WOOD uſually planted is *white-thorn*; which, if properly planted, flouriſhes abundantly

abundantly in the Norfolk ſoil; ſome few barren ſpots excepted; in which ſituations *furze* is the principal fence. *Crab-tree* is ſometimes, though ſeldom, planted; but I have ſeen it make a rapid progreſs upon very poor ſoil; and for ſuch it would, I apprehend, be found preferable to the hawthorn. *Holly* abounds in old hedges; growing very luxuriantly, and forming an admirable ſhelter for cattle in winter; beſides giving, in that bleak ſeaſon, a chearfulneſs and fancied ſhelter to the face of the country.

IX. Upon ſome eſtates it is the practice to put in, when a new hedge is planted, a holly at every rod, and an OAK-PLANT at every two or three rods, among the white-thorn layer.

This is an excellent practice; provided the young oaks be trained to a proper height before they be ſuffered to form their heads. For, in this caſe, they will become a valuable ſource of timber, without injuring, in any material degree, the incloſures they grow between. It is the roots of the aſh and elm, and the tops of low pollards, and tall over-grown hedge-woods, which are injurious to the farmer. A timber-oak, of fifteen to twenty feet ſtem, does very

little if any injury either to the crop, or the hedge growing under it.

But if, on the contrary, the oaklings, thus planted, be ſuffered to riſe with more than one ſtem, as ſtubwood; or, riſing ſingly (which is ſeldom the caſe in a young hedge), they be permitted to form their heads at eight or ten feet high, with flat wide-ſpreading tops,—they loſe their intended value, and become nuiſances, not only to the adjoining incloſures, but to the hedge in which they grow.—Eligible, therefore, as it is to plant young oaks among hedgewood, the advantage to be obtained from it reſts wholly on the after-management.

For reaſons why a tenant ſhould not be ſuffered to *prune timber-trees*, ſee MIN. 5.

For reflections on the time of cutting hedges, ſee MIN. 34.

For a propoſed method of *preventing tenants from deſtroying hedges*, ſee MIN. 42.

For obſervations on *ditches againſt the ſides of hills*, ſee MIN. 45.

For obſervations on *ivied ditch-banks*, ſee MIN. 63.

For

For obſervations on *thinning timbers*, and on *twin timbers*, ſee MIN. 85.

For obſervations on *renewing* worn-out hedges, ſee MIN. 87.

For an inſtance of a ſufficient *furze-hedge*, ſee MIN. 88.

For general obſervations on *timbers and pollards* in hedges, ſee MIN. 90.

For an inſtance of *ditches waſhed down* by rain, ſee MIN. 103.

For the method of *ſowing furze-ſeed*, with general obſervations on *furze-hedges*, ſee MIN. 104.

For the management of hedges in Fleg, ſee MIN. 106.

For reflections on the *Midſummer-ſhoot*, ſee MIN. 130.

15.

INCLOSURES.

THIS DIVISION of the county being principally incloſed—ſome heaths and a few common-fields towards the north coaſt excepted—inſtances of INCLOSURE ſeldom occur. Two inſtances, however, have fallen ſo far under my notice, as to enable me to convey a general idea of the principles on which they were conducted.

One of them took place in the northern part of the Diſtrict. The ſubjects of incloſure were a heathy waſte of ſeveral hundred acres, of a tolerably good ſoil—(but, being overgrown with furze, heath, brakes, and other incumbrances, afforded little profit either to individuals or the community); together with two or three hundred acres of common-field land.

This incloſure was proſecuted on the ſame liberal principles which raiſed the HOLKHAM eſtate,

eſtate, and other eſtates in Weſt-Norfolk, to their preſent ſtate of productiveneſs. But as the particulars which I procured, reſpecting it, will appear in a Minute at the cloſe of the ſecond volume, it is unneceſſary to mention them here.

The other took place (or was intended to take place) in a more ſouthern part of the Diſtrict: the ſubject, part of an extenſive and *chiefly barren* heath, belonging to *ſeveral* ſurrounding *pariſhes*, and ſituated *diſtant from manures*. But here I am debarred, by motives which I flatter myſelf are a ſufficient excuſe for my ſilence, from entering into further particulars; and my only reaſon for introducing the article INCLOSURES into the preſent volume was, to gain an opportunity of inferring, from obſervations made in this Diſtrict, that very much depends, not only on the MANAGEMENT, but on the SUBJECT, or ſite, of incloſure; and that lucrative and laudable as incloſures in general are, or might be rendered, it behoves men of landed property, and all men concerned in theſe important tranſactions, to ſtudy with ſufficient attention the

NATURAL ABILITY of the object in view, and to raiſe their eſtimate, with circumſpection, on PRINCIPLES OF MANAGEMENT ſufficiently enlarged, to guard againſt miſcarriages, and ſecure, with a degree of moral certainty, a PERMANENT IMPROVEMENT.

For ſome account of the *Felbrigg* incloſure, ſee MIN. 137.

PLANTING.

16.

PLANTING.

PLANTING is not only laudable as an art, at preſent of the higheſt importance to this iſland, but pleaſurable as an amuſement.

In Norfolk, I had neither leiſure nor opportunity of extending, on a large ſcale, my *practice* in this art; but, as far as *obſervation* could inform me, I had every advantage. A perſon who had been regularly bred up as a nurſeryman, and who was a credit to the art he profeſſed, gave me every opportunity of making myſelf fully acquainted with the buſineſs of the nurſery, and the *manual operations* of planting: while a ſuite of plantations, of various ages, and in various *ſtates*, paſſing daily under my eye, afforded me an opportu-

tunity, equally fortunate, of making my obſervations on what may be termed the *theory* of planting.

But my mind being ſufficiently employed on the ſubjects of ESTATE-AGENCY and HUSBANDRY, I did not attempt, in Norfolk, to digeſt my ideas upon PLANTING. I was ſatisfied with having gained a general knowledge of the ſubject, and with having impreſſed on my memory a few leading principles.

HEDGE-PLANTING, and the management of HEDGE-ROW TIMBER, I conſidered as inſeparable departments of the management of eſtates (ſo nearly are planting and eſtate-agency allied); and therefore ſtudied them with unremitted attention. I was alſo led, in a few inſtances, from the eſtate to the plantation, as will appear by Minutes made at the time of practice; and was alſo induced to minute a few ſtriking incidents which occurred to my obſervation.

But THE PROPAGATION OF WOOD-LANDS, merely as ſuch, not being a practice of the Diſtrict, I had few opportunities of making obſervations on that important ſubject. Ornamental plantations, about the reſidencies of men of fortune, are here, as in other Diſtricts, faſhionable;

faſhionable: not, however, as objects of ornament merely, but likewiſe as nurſeries of game.

But it being my intention to confine myſelf, in this work, to utility, rather than to treat either of ornaments or amuſements, I will, under this head, only beg leave to recommend to the proprietors of landed eſtates in Eaſt-Norfolk to propagate COPPICE-WOODS on the ſpringy margins of meadows, and on thoſe incorrigible ſwamps which occur in almoſt every eſtate; and to remove the woody hedge-rows, ſo diſgraceful to Norfolk as an arable country: raiſing, in the new-planted hedges, OAK-TIMBERS, at ſuitable diſtances; training them up to ſuch height as will render the timber of the greateſt value, and do the land they grow in the leaſt poſſible injury. I will alſo beg leave to intimate that the ſpirit which, at preſent, very properly prevails of extirpating ASH-TIMBER from hedge-rows, will, in all human probability, be productive of a ſcarcity, in time to come, of that neceſſary material in rural affairs: and it is equally probable, that whoever, at this time, propagates GROVES OF ASH, in angles and vacant corners, will be increaſing, at a ſmall expence, the value of their eſtates,

and

and be providing, at the ſame time, a *neceſſary of life* for the riſing community.

It now only remains to mention the method of SELLING and TAKING DOWN TIMBER, in this Diſtrict.

The prevailing practice is to ſell it ſtanding, at ſo much a ton when fallen; meaſuring the *timber*, down to ſix inches timber-girt; the *top-wood* and the *bark* (of oak) becoming the property of the purchaſer; who is uſually at the expence of taking it down.

It is likewiſe cuſtomary for the purchaſer to diſpoſe of the bark (of oak), and ſometimes the top-wood, by the ſame admeaſurement; the prices of both varying according to the proportion which the tops of the trees, under ſale, bear to their ſtems.

The price of *oak-timber*, in 1782, was three guineas to three pound fifteen ſhillings a ton, of forty feet: the price of *oak-bark*, from ten to twelve ſhillings; and of *top-wood*, from ſeven to twelve ſhillings, each load of timber. The price of naked oak-timber, in the rough, was fifteen to twenty-pence a foot.

The price of *aſh-timber*, ſtanding, was forty to fifty ſhillings a ton: in the ſtick, nine-pence to one ſhilling a foot.

The

The *elm* of Norfolk is of little value; for before it acquires a ſize to be uſeful, it begins to decay at the heart;—perhaps, owing to the lightneſs of the ſoil.

The *aſh* on the drier lighter ſoils appears ſtunted and ſhort; but in, and near, the meadows and ſwamps, it is of a firm growth, and a good quality.

The *beech* is very rare in this Diſtrict: nevertheleſs, I have ſeen it, upon a ſubſtratum of marl, of a beautiful growth, and conſiderable ſize.

The method of TAKING DOWN timber, in Norfolk, is uniform, and, perhaps, peculiar to the country. It is called, very aptly, *grub-ſelling*; the operation partaking both of grubbing and of felling with the axe, in the common way, above-ground; a method which is waſteful of timber. The Norfolk woodman, therefore, fells below the ſurface of the ground; by cutting off the horizontal roots cloſe to the ſtem; which, inſtead of ſhortening, he, in effect, lengthens, by adding to it a conical point, cut out of the crown of the root: ſo that by this way of proceeding, a greater length of timber is obtained, than by,

firſt,

firſt, grubbing, and, afterward, cutting off the butt with a ſaw. Grub-felling is, no doubt, the moſt eligible way of taking down hedge-row timber; and this accounts for its being the eſtabliſhed practice in Norfolk.

For an inſtance of the circumſpection requiſite in *pruning hedge-row timbers*, ſee MIN. 5.

For an inſtance of *tapping young oak-plants*, in a neglected nurſery-ground, with a common ſpade, ſee MIN. 36.

For an inſtance of ſucceſs in *tranſplanting large oaks*, ſee MIN. 37.

For general obſervations on the proper ſoil and ſituation for the *aſh*, ſee MIN. 38.

For an idea relative to *changing the crop* of timber in a given ſituation, ſee MIN. 81.

For obſervations on *thinning hedge-row timbers*, and on *twin timbers*, ſee MIN. 85.

For general obſervations on the treatment of *timbers and pollards in hedges*, ſee MIN. 90.

For an inſtance of *thinning a tall mixed plantation*, with obſervations on different *ſpecies* of timber-trees, and with reflections on the *after-management* of plantations in general, ſee MIN. 95.

For obſervations on the *Midſummer-ſhoot*, ſee MIN. 130.

GENERAL

17.

GENERAL MANAGEMENT

OF

FARMS.

THE PRINCIPAL OBJECTS of the Eaſt-Norfolk huſbandry are,

BULLOCKS,

BARLEY,

WHEAT;

the other productions of the Diſtrict being in a great meaſure ſubordinate to theſe three; from which, chiefly, the farmer expects to pay his rent and ſupport his family.

The bullocks are fatted chiefly on

TURNEPS,

and ſometimes finiſhed with

RYE-GRASS, and

CLOVER:

which laſt are alſo raiſed for horſes, ſtore-cattle, and the dairy.

Oats

OATS,

too, are raiſed in ſmall quantities for horſe-corn; and

BUCK *,

in great abundance, for pigs and poultry. Some few

PEAS

are alſo grown for ſwine, (or are bought up by the millers, to improve the *colour* of their wheat-flour);—and ſome, but very few,

VETCHES,

for ſoiling horſes.

WELD,

HEMP †,

HOPS, and

COLE-SEED,

(the laſt more particularly in Fleg) are occaſionally raiſed, but in inconſiderable quantities.

* BUCK—*polygonum fagopyrum*—buck wheat, or *brank*; its common name in the ſouthern hundreds of Eaſt Norfolk; but in *this* part of the county its only name is BUCK: indeed the addition *wheat* (probably a corruption of the Dutch *weet*) is abſurd, and altogether impro, per.

† Some ſmall quantities are grown upon the eaſtern coaſt.

Sheep

SHEEP

can ſcarcely be enumerated among the OBJECTS of the Eaſt-Norfolk huſbandry; and

COWS

are kept chiefly for the purpoſe of breeding, and the uſe of the family.

SWINE and

POULTRY

are well attended to; and, in the ſouthern parts of the Diſtrict, are carried, in great quantities, to the Norwich and Yarmouth markets.

RABBITS,

though ſome few warrens occur in Eaſt-Norfolk, are not a ſtaple production.

But before the particular practices obſerved, and the proceſſes made uſe of, in obtaining, ſeparately, theſe ſeveral PRODUCTIONS, can, with any degree of propriety, be deſcribed;—it will be neceſſary, firſt, to premiſe ſuch GENERAL PROCESSES, and departments of management, as do not pertain, eſpecially, to any individual OBJECT.

THE GENERAL SUBJECTS neceſſary to be premiſed on the preſent occaſion, are,

The prevailing method of LAYING-OUT FARMS, in Norfolk.

The

THE SUCCESSION OF ARABLE CROPS, in this Diſtrict.

THE SOIL-PROCESS;—or the Norfolk method of putting the ſoil into a proper ſtate of cultivation.

THE MANURE-PROCESS;—or the general application, and method of applying, manures in Norfolk.

THE SEED-PROCESS;—or general obſervations on the different modes of ſowing.

THE VEGETATING-PROCESS;—or the ſummer care, protection, and management of crops, in general, from ſeed-time to harveſt.

THE HARVEST-PROCESS;—not the proceſs of harveſting any one particular crop; but the general buſineſs of harveſt.

THE FARM-YARD MANAGEMENT; not a detail of the barn-management and conſumption of one ſeparate ſpecies of crop, nor the winter-treatment of any one particular ſpecies of live-ſtock; but a deſcription of ſuch general buſineſs of the barn and farm-yard, as cannot with the ſmalleſt degree of propriety be given under any one ſpecies,—either of ſtock, or crop.

For

For obſervations on the Norfolk farmers partiality to arable land, ſee MIN. 49.

For further obſervations on this ſubject, and of their neglect of graſs-land, ſee MIN. 51.

For an evidence that the ſtock of a farm ought to be adapted to the given ſoil, ſee MIN. 75.

For an evidence of the cheapneſs of the Norfolk practice of huſbandry, ſee MIN. 98.

For the general management of the Fleg Hundreds, ſee MIN. 106.

For an evidence of the excellency of the arable management of Norfolk, ſee MIN. 112.

For an evidence of its being adapted to a dry ſoil, ſee MIN. 114.

For the general management in Blowfield Hundred, ſee MIN. 118.

18.

LAYING-OUT FARMS.

MANY of the preſent farms, eſpecially thoſe of conſiderable ſize, have formerly lain to perhaps two, three, or more ſeparate meſſuages; each, perhaps, occupied by its reſpective owner: this, and the intermixture of property already ſpoken of, accounts for that abundance of petty incloſures,—or "pightles"—ſo diſgraceful to Eaſt-Norfolk as an arable country.

It is, however, the prevailing faſhion at preſent, when adjoining pightles belong to the ſame proprietor, or when they can, by exchanges, be brought into the ſame hands, to eraſe the intermediate fences, and lay them into incloſures proportioned to the ſize of the farm to which they belong.

This, namely, proportioning the ſize of the fields to that of the farm, is a matter to which Norfolk huſbandmen at preſent are very attentive. The ſingular ſyſtem of huſbandry practiſed

tiſed in this Diſtrict calls for a greater number of diviſions than are neceſſary in moſt other places. For although an Eaſt-Norfolk farmer divides his farm into what he calls "ſix ſhifts," to receive his principal crops in rotation, he does not wiſh for fewer than nineteen or twenty arable diviſions, in order that he may have an opportunity of diſtributing his turnep-crop over different parts of his farm.

For ſimilar reaſons he does not claſs, but intermixes, his other arable crops.

This intermixture of crops renders driftways neceſſary;—and they are no where more numerous than in Norfolk.

Another important matter to which Norfolk huſbandmen are attentive in laying-out their farms, is that of endeavouring to lay their "furlongs" north-and-ſouth, that the ſun may have an equal influence on either ſide the narrow ridges, upon which their wheat is almoſt univerſally raiſed.

19.

SUCCESSION.

IN NORFOLK, as in other arable countries, husbandmen vary more or less in the succession of crops and fallows to each other. But if we confine ourselves to *this* District; namely, the north-east quarter of the county; we may venture to assert, without hazard, that no other District of equal extent in the kingdom is so invariable in this respect; common-field Districts excepted.

It is highly probable, that a principal part of the lands of this District have been kept invariably, for at least a century past, under the following course of cultivation:

Wheat,
Barley,
Turneps,
Barley,
Clover,
Rye-grass, broken up about Midsummer, and fallowed for wheat, in rotation.

Thus,

Thus, ſuppoſing a farm to be laid-out with nineteen or twenty arable diviſions of nearly equal ſize, and theſe to be brought into ſix regular ſhifts, each ſhift would conſiſt of three pieces; with a piece or two in reſerve, at liberty to be cropped with oats, peas, tares, buck; or to receive a thorough cleanſing by a whole-year's fallow.

This courſe of culture is well adapted to the ſoil of this Diſtrict, which is much more productive of barley than of wheat; and is in every other reſpect, as will hereafter appear, admirably adapted to that excellent ſyſtem of management of which it is the baſis.

The ſoil of the ſouthern parts of the Diſtrict being ſtronger and deeper than that upon which the foregoing courſe of crops is prevalent, it is better ſuited to wheat; and there the round of

Wheat,
Turneps,
Barley,
Clover,

is common; though not in univerſal practice.

This difference in ſoil and management renders it neceſſary to conſider the ſouthern

Hundreds of Fleg, South-Walſham, and Blowfield, as appendages, rather than as parts, of the Diſtrict moſt immediately under deſcription: which is furniſhed with a leſs genial ſoil; namely, that ſhallow, and ſomewhat lightiſh, ſandy loam, which may be called the common covering of the county; broken, however, in ſome places, by a richer, ſtronger, deeper ſoil; and in others, by barren heaths and unproductive ſands; from which even the Hundreds of Erpingham, Turnſtead, and Happing, are not entirely free; though, perhaps, they enjoy a greater uniformity of ſoil than any other Diſtrict of equal extent in the county.

This, therefore, is the ſite beſt adapted to the ſtudy of the ſyſtem of management which has raiſed the name of Norfolk huſbandmen, and which is ſtill preſerved, inviolate, in this ſecluded Diſtrict. For a ſhallow ſandy-loam, no matter whether it lie in Norfolk or in any other part of the kingdom, there cannot, perhaps, be deviſed a better courſe of culture; or, taken all in all, a better ſyſtem of management, than that which is here in univerſal practice *.

* If any improvement of the preſent ſyſtem can be made, it would perhaps be by adopting the practice of a judicious

But excellent as this ſucceſſion of crops undoubtedly is, it cannot be invariably kept up; for even a Norfolk huſbandman cannot command a crop of turneps or a crop of clover; and when either of theſe fail, the regularity of the ſucceſſion is of courſe broken into.

If his turneps diſappoint him, he either lets his land lie fallow through the winter, and ſows it with barley, in courſe, in the ſpring; or, more frequently, though leſs judiciouſly, ſows it with wheat in autumn; ſometimes, though not always, ſowing it with clover and rye-graſs in the ſpring; by this means regaining his regular courſe.

If the clover miſs, the remedy is more difficult; and no general rule is in this caſe obſerved. Sometimes a crop of peas is taken the firſt year; and the next, buck plowed under: or perhaps a crop of oats are taken the firſt year, and over theſe clover ſown for the ſecond: in either of theſe caſes, the ſoil comes round for wheat the third year, in due ſucceſſion.

ous huſbandman in the northern part of the Diſtrict (Mr. Edmund Bird, of Plumſtead); who divides his farm into ſeven, inſtead of ſix, ſhifts; his courſe of *crops* are the ſame as thoſe of his neighbours; his ſeventh ſhift being a whole-year's *fallow* for wheat.

It has already appeared in the HEADS OF A LEASE, page 75, that the Norfolk farmers are reſtricted from taking more than two crops of corn ſucceſſively. At the cloſe of a leaſe this reſtriction may ſometimes have a good effect; for ill-blood between landlord and tenant too frequently leads a farmer to do what he knows will, in the end, be injurious both to himſelf and his farm. The crime of taking more than two crops of corn ſucceſſively is, however, held, by farmers in general, in an odious light, and is never practiſed by a good farmer, unleſs "to bring into courſe," a ſmall patch, with ſome adjoining piece;—or to regulate his ſhifts.

SOIL.

20.

SOIL-PROCESS.

IN THIS important department of husbandry the Norfolk farmers are proficients.—It is observable, however, that Norfolk being an old-cultivated country; and having been, century after century, kept under a course of arable management; the difficulties of breaking-up rough waste lands, and old leys, are, at present, unknown; the whole business of the soil-process being, now, the regular routine of removing those foulnesses, which all arable lands are liable to; and in putting the soil into a fit state for the reception of the seed.

But these operations, simple as they may seem to unpractical observers, require much skill and judgment; for on a proper conduct in this department depends, considerably, the profit or loss of an arable farm. And as the Norfolk husbandmen appear to me to be masters in this art, I will endeavour to convey to my readers, in an ample manner, their conduct

duct in this particular; in doing which, it will be proper to conſider the following articles ſeparately:

1. Plowing,
2. Harrowing,
3. Rolling,
4. Cleanſing,
5. Laying-up,
6. Draining;

and, previouſly, to give ſome account of the ſingular practice of this country, with reſpect to the hours of work obſerved, in every department of the ſoil-proceſs.

The univerſal practice, I believe throughout the county, is to go what is called "two journies." In winter, when days are ſhort, the teams go out as ſoon as it is light, and return home at twelve o'clock to dinner:—go out again at one, and remain in the field until dark. In longer days, the cuſtom varies:—the moſt general practice is to go out at ſeven in the morning;—return at noon:—go out again at two;—and return at ſeven in the evening. Ten hours; namely, five hours each journey;—are the longeſt hours of work; except in the hurry of barley ſeed-time, when theſe hours may ſometimes be exceeded.

The length of day is, therefore, not exceſſive; but the work performed in ſo ſhort a time is

ex-

extraordinary. The Norfolk plowmen always do as much—in general, a great deal more—in one journey, that is in five hours,—than plowmen in general do in eight hours; which, in moſt parts of the kingdom, is the length of the plowman's day.

This fact, however, is no longer extraordinary, when we obſerve their paces, reſpectively. Plow-teams, in general, travel at the rate of one to two miles an hour; whereas in Norfolk they ſtep out at not leſs than three to four miles an hour; and the ſame, or a greater agility, is preſerved in the other departments.

I. PLOWING.—Every thing is plowed with two horſes, abreaſt, driven and guided by the plowman (ſee IMPLEMENTS); and the common day's work, except in wheat ſeed-time is two acres! a fact, this, which nothing but actual obſervation could have taught me to believe.

The Norfolk huſbandmen pay due attention to the *ſtate of the ſoil* to be plowed, being careful not to plow it too wet *, nor too dry; the

* The Norfolk plowmen have a ſingular expedient to prevent the ſoil when moiſt from turning up in whole gloſſy furrows, which they term "ſcoring;" to prevent which they tie a piece of ſtrong rope-yarn round the plate or mould-board; which, by this means, is prevented from acting as a trowel upon the ſoil.

latter

latter moſt eſpecially: not only becauſe their plow and team are ill-calculated for ſtubborn work; but leſt, in breaking up the ſoil at a time when it is too dry to be cut clean with the ſhare, it ſhould riſe in clods, and thereby diſturb the "pan;" which, upon every occaſion, is held ſacred (ſee SOIL).

Inſtances of the miſchiefs of *deep-plowing* are related: one of them by an old, and moſt judicious huſbandman, to whoſe opinion the greateſt deference and attention is due *. His men having, in his abſence, plowed part of a cloſe when it was too dry, it broke up in large thick clods; the pan, which adhered to the ſoil, being of courſe brought up to the ſurface. He immediately foreſaw the effect which, I have not a doubt, followed. This patch, from no other apparent circumſtance whatever, could not, with all his ſkill and induſtry, be brought to bear a crop of any kind equal to that of the reſt of the cloſe, for ſix or ſeven years afterward. The crops on this part were uniformly, and obviouſly, not only foul, but bad; and this, notwithſtanding an extraordinary allowance of manure and tillage were, from time to time, beſtowed upon it.

* Mr. Arthur Bayfield, of Antingham.

From

From this and other inſtances of a ſimilar kind, as well as from general obſervation, I am convinced that to plow beneath the wonted depth, would, under the ſingular circumſtances of the Norfolk ſoil, be injudicious management;—unleſs ſome ready method could be hit upon of forming, at a greater depth, a freſh pan.

The methods of plowing are various.—In making fallows, the prevailing practice of plowing fleet and "full pitch," alternately, is very judicious: it not only breaks and mixes the ſoil more readily than the common practice of plowing always the ſame, or nearly the ſame depth; but, in the firſt two plowings, it renders the operations more eaſy: the firſt, being thin, goes lighter off the ſhare; and the ſecond being always (except for turneps) a croſs-plowing, the ſhare has freſh firm ground to lay hold of, by which means the plow is kept ſteady to its work.

To increaſe this advantage it is common, on very thin ſoils, to break up fallows by "rice-balking," or by "ſlob-furrowing;" which are nearly the ſame operation performed in different ways.

In

In rice-balking, the "flag"* is always turned toward the unplowed ground, the edge of the coulter paſſing cloſe to the edge of the flag laſt turned: whereas, in ſlob-furrowing, the flag is turned towards the plowed ground, the coulter paſſing fifteen or ſixteen inches from the laſt plow-furrow;—into which, in this caſe, the edge of the flag hangs;—and, in both caſes, a ſlip of unplowed ſoil, of a width nearly equal to that of the flag, is buried.

Theſe methods of plowing are not peculiar to Norfolk; but I know no Diſtrict in which they are ſo commonly practiſed by farmers in general as they are in this county. The firſt is moſt in uſe: it is the neater, and, perhaps for the Norfolk ſoil, the more eligible operation.

Another method of plowing practiſed in Norfolk, but not peculiar to it, is "two-furrowing:"— trench-plowing—double-plowing. This is done with two plows, one following the other in the ſame place: it is, in the ſhallow ſoil of this Diſtrict, a difficult operation; but the wheels and the broad-ſhare of the Norfolk plow render it ſingularly well adapted to this buſineſs. The ſoil, perhaps not more than

* The provincial term for the furrow turned.

four

four or five inches deep, is to be divided into two thin ſlices, the under one being to be taken up thick enough to bury the firſt, without bringing up at the ſame time any part of the ſubſtratum or pan: and this I have ſeen done with great exactneſs.

The price of plowing, with a plain, clean furrow, is two ſhillings and ſixpence an acre! which is the current price of the country, and the rate which is, I believe, almoſt invariably adopted by referees between out-going and in-coming tenants. This intereſting fact alone, accounts for the comparative high price of land in Norfolk. In many parts of the kingdom, ten ſhillings an acre is a price of plowing, equally current. How much, then, it behoves gentlemen of landed property to introduce upon their eſtates the practice of PLOWING WITH TWO HORSES, AND GOING TWO JOURNIES A DAY,—where it is practicable; and where it is not, to endeavour, by other means, TO LOWER THE EXPENCE OF PLOWING; and thus by introducing a real improvement, add a permanent increaſe to their rent-rolls.

II. HARROWING.—In making fallows, it is cuſtomary to harrow preſently before each plowing;

ing; the operation being too frequently deferred ſo long, that the ſeeds of weeds, ſet at liberty by the harrows, have not time to vegetate, before they are again turned under the ſoil, and placed out of the ſphere of vegetation.

This injudicious management is not however univerſal; good farmers making a point of letting their fallows lie a ſufficient length of time between the harrowing and the ſucceeding ſtirring.

One admirable practice peculiar, I believe, to Norfolk, is that of making the horſes trot at harrow: it being a cuſtom, which is prevalent throughout almoſt every department of this operation, to walk the horſes againſt the riſe, if any, and trot them back again in the ſame place. This excellent practice not only rids work and diſengages the root-weeds from the harrow-tines, as well as from the ſoil, leaving them looſe on the ſurface; but levels the land, in a manner which would be difficult to deſcribe, and which obſervation, alone, can render evident.

The day's work of a pair of horſes, walking one way and trotting the other, the harrows over-lapping ſo as to give the ground a full double-tine, is laid at about ſeven acres.

III.

III. Rolling.—Very little general matter falls under this head. One circumſtance, however, requires to be mentioned.

The roller, notwithſtanding the lightneſs of the ſoil, and its proneneſs to be injured by dry weather, is never uſed in Norfolk for the purpoſe of compreſſion. I never ſaw one uſed by a farmer either upon fallow or upon a lay; not even upon the firſt year of a clover-lay to ſmooth the ſurface for the ſithe.

The only uſes to which I have ſeen a roller put, in this Diſtrict, are that of ſmoothing the ſurface before ſowing, to prevent the ſeed from running down too low, and that of ſmoothing it afterwards as a preparation for the ſithe *: and even *this* operation is performed with a roller not more perhaps than ſeven or eight inches in diameter! a circumſtance which I confeſs, I am no way able to account for: nevertheleſs, it would be raſhneſs to condemn an eſtabliſhed practice, unleſs I could, from my own experience, or from adequate obſervation on the experience of others, prove it to be ineligible.

I cannot, however, refrain in this inſtance from recommending to the Norfolk huſband-

* And ſometimes wheat is rolled in autumn. See Wheat.

men to try, by accurate and repeated experiments, whether the rolling of fallows, lays, corn-crops, and meadows, with a heavy roller, would, or would not, be eligible management, on the Norfolk ſoil.

IV. CLEANSING PLOW-LAND.—The Norfolk method of cleaning fallows from "quicks" and other root-weeds, is, when they are diſengaged from the ſoil, to draw them into "ringes"—rows—with the ſame harrows with which they were diſengaged (neither horſe nor hand-rakes being ever uſed in the operation). In this caſe, the horſes, walking ſlowly, are driven with reins, the driver following the harrows, and lifting them up, at ſtated diſtances. The "quicks" are then ſhook into heaps with forks, and either burnt in the cloſe, or carried off to digeſt in large heaps, as the weather ſuits, or the judgment of the farmer may determine.

If it be right, in making a fallow, to burn or carry off the roots of couch or other graſſes, this is perhaps as ſimple a proceſs as can be uſed for the purpoſe.

It is a general idea that marl helps to cleanſe the ſoil from quicks.

V. LAYING-

V. LAYING-UP PLOW-LAND.—For wheat, the ſoil is uſually gathered up into very narrow ridges: but for every other crop it is laid into wide flat "warps," or beds of about ten paces wide; without any regard being had to the nature of the ſubſoil: which, notwithſtanding it is, in general, ſufficiently abſorbent to admit of this practice, is ſometimes too retentive, and cold, to admit of it with propriety.

This kind of land, however, ſeldom occurs in Norfolk; and this circumſtance may be a good reaſon why a Norfolk farmer is ſo truly helpleſs on a wet cold-bottomed ſoil *; and may account, in ſome meaſure, for his generally failing in his attempts to farm on any other ſoil than that of his own country.

The idea of gathering the ſoil into ridges, and ſinking croſs-furrows for the purpoſe of getting rid of the ſurface-water, is unknown to him: if the ſubſoil is not thirſty enough to drink up the rain-water as faſt as it falls, it lies upon the warps, or makes its way acroſs them in a channel of its own.

This, however, even ſuppoſing the practice to be without exceptions, is no heavy charge

* For a ſtriking inſtance, ſee MIN. 114.

againſt the Norfolk huſbandmen, conſidered merely as ſuch; for the Norfolk ſoil in general is ſufficiently abſorbent to require neither ridge nor furrow.

But there are patches, eſpecially on the ſides of the ſwells, and on the margins of the meadows, which are too retentive to admit of ſuch management; and there are *ſome few* huſbandmen, who are ſufficiently attentive to ſurface-drains for carrying off the ſuperfluous rain-water; or, if that be found inſufficient, have recourſe to

VI. UNDER-DRAINING.—This, however, is a practice which is not of long ſtanding in the Diſtrict; but may, I make no doubt, be found highly uſeful to many parts of it.

Under-draining has, hitherto, been chiefly, I believe, done with wood; there being no ſtones in the Diſtrict; except a few ſmall flints gathered off the land; and except ſea-ſtones upon the coaſt;—either of which would, if properly uſed, be preferable to wood.

For

For an inſtance, and the method, of under-draining with wood, ſee MIN. 2.

For a particular ſoil-proceſs for barley and turneps, on a very thin light ſoil, ſee MIN. 57.

For an evidence of the excellency of the Norfolk ſoil-proceſs, ſee MIN. 98.

For an inſtance of injudicious management of a wet ſoil, ſee MIN. 114.

For further obſervations on FALLOWS, ſee the heads BUCK, TURNEPS, BARLEY, WHEAT.

21.

MANURE-PROCESS.

THE PRINCIPAL MANURES ſet on upon the lands of this Diſtrict appear, in page 13, to be,

1. Marl, clays, and other earths.
2. Dung, and compoſts formed with it.
3. Lime.
4. Soot.
5. Rape-cake.
6. Malt-coombs.

I. MARLING. Marl has been ſo long in uſe in *this* Diſtrict, that there are few farms without marl-pits upon, or near them; ſo that *ſearching for marl* is at preſent ſeldom requiſite, and the art of diſcovering it not much ſtudied. The herb coltsfoot (*tuſilago farfara*) abounding on the ſoil, is conſidered as an indication of a jam of marl being ſituated near the ſurface. But, whether this is, or is not, an infallible guide,—time and accidents or intentional reſearches have not failed to diſcover

beds

beds of marl in almoſt every eſtate, and, in ſome places, on almoſt every farm, ſituated ſufficiently near the ſurface to be worked with advantage.

Of the *quality of marls*, as has been already obſerved, the Norfolk farmers are, in a great meaſure, uninformed. That which falls moſt readily, and "gets to work" the ſooneſt, is in the beſt eſteem; but, in general, the quantity of "uncallow" (namely, the coping, or covering of earth, which lies upon the head, or jam) is more attended to than the intrinſic quality of the marl.

The *depth of uncallow* is generally very unequal: perhaps, on the ſame jam of marl it will vary from one or two, to ſix or eight, feet deep, the ſurface of the jam uſually riſing into inequalities, termed heads.

The *depth of the jam* is equally uncertain: I have ſeen one worked twenty feet deep; but in general, I believe, ten or twelve feet may be reckoned a middling depth.

The *bottom of the jam*, being generally a white abſorbent ſand, no pump or artificial drain is requiſite to free a Norfolk marl-pit from water, which no ſooner touches the ſand

than it vaniſhes, as through the grate of an open drain.

In *working a marl-pit*, the top-ſoil is thrown back for manure—the remainder of the uncallow thrown to the bottom of the pit, and levelled for the carts to ſtand upon. When the jam is low, the marl is thrown immediately from it into the carts; but if it be too high for this operation, piles are driven in a row a few feet from the face of the jam; and, as ſoon as a crack is formed, water is poured into it, more eſpecially when the marl is dry and ſtubborn; and by this means many loads are thrown down at once; either to the bottom of the pit, or on to a plat-form level with the body of the cart; into which the marl, in this caſe, is thrown with great eaſe. Taking up the bottom of the jam is the moſt difficult part of the operation; the marl being firſt to be caſt up on to the bottom of the pit, and afterwards to be thrown into the carts. But by thus bringing up the bottom, two valuable things are obtained;—a drain for the water, and a moſt convenient receptacle for the next line of uncallow.

The

The *labour* beſtowed on marl previous to its being put into the cart, whether it be incurred by throwing down, looſening by pecks, crows, &c. or fetching up the bottom, is termed "caſting"—the act of throwing it into the cart being called "filling."—The price of caſting is three-pence to ſix-pence a load, according to the circumſtances of the pit (the uncallowing being generally done by the day); and the price for filling two-pence to two-pence half-penny, according to the ſize of the loads carried. I have known three-pence a load given for filling and ſpreading large loads: the price of ſpreading, alone, is about one ſhilling an acre. The number of loads carried out in a day by one team, varies, of courſe, with the diſtance to be carried: when the pit happens to lie in or contiguous to the ground to be marled, thirty loads have been carried;—but five-and-twenty is, I believe, conſidered as a good day's work.

The *quantity* ſet upon an acre is equally various; depending upon two things:—upon the judgement of the perſon who marls; and upon whether the land has, or has not, been marled heretofore.

It

It is known, from common experience, that land which has been recently marled receives no apparent benefit from a ſecond dreſſing of the ſame manure: but it is equally well known that, after ſome length of time has elapſed, a repetition of marling will generally anſwer.

It is a notion, pretty generally adopted, that, in this caſe, the quantity ought to be greater than it was the firſt or preceding time: and it being formerly the practice to ſet on a great quantity at once,—ſeldom, perhaps, leſs than forty loads an acre,—this notion has, probably, deterred many perſons from doing that which would have been ſerviceable to themſelves and their country.

But there is not, I believe, any general rule known, reſpecting either time or quantity: I have had frequent opportunities of making obſervations on a farm which affords a ſtriking inſtance on this ſubject. Two or three different tenants had failed ſucceſſively on this farm; though by no means high-rented. The greateſt part of it had, within the memory of man, been marled with not leſs, in all human probability, than forty loads an acre; and the tenants who failed deſpaired of reaping any benefit from a ſecond marling after ſo ſhort

an

an interval of time: but this farm falling into the hands of a more judicious tenant, he has, by marling, (and by other acts of good management) accumulated, in little more than twenty years, a farmer's fortune; during which time he has marled upwards of one hundred acres; and has found, from long experience, that twenty-five loads an acre is, notwithstanding the recent marling, a sufficient quantity.

I do not mean to intimate that the same management would every where produce the same effect; but I will venture to say, that no man having marl upon his premises, ought to neglect to try its effect, by accurate and repeated experiments, upon every piece of land in his possession,—without being led away by any received notion,—or general rule.

The quantity set on, upon land which is not known to have been marled, or out of which the marl is worn, is, at present, less than formerly.

In the southern Hundreds, to which marl is obliged to be fetched a great distance, ten or twelve loads are considered as a dressing; six or eight are frequently set on.

In the more central and northern parts of the District, where marl is common on almost

every

every farm, twenty to thirty loads an acre are generally allowed,—and ſometimes forty loads.

When it is known, from experience, or taken for granted without proof, that land, either through a recent marling or other cauſe, is not improveable by marl alone, a ſmall quantity is frequently mixed up with dung; either by bottoming the farm-yard, or the muck-heaps, with it; or by mixing it layer for layer with the dung in the heaps. In either caſe, they are afterward turned up, and thereby mixed more intimately together.—With this preparation, marl has been found to anſwer, where, in its natural ſtate, it had no effect.

The ſymptom, or indication, of a piece of land requiring to be marled, is taken from the plants which prevail upon it.—"Buddle" (*chryſanthemum ſegetum*—corn-marigold) is conſidered as a certain intimation that the land it abounds upon requires to be marled. "Smart-weed" (*polygonum Pennſylvanicum*—pale-flowered perſicaria) is likewiſe an obſervable ſymptom. It is, I believe, an undoubted fact, that marl, in a manner, extirpates theſe plants from the ſoil;—and that "quicks" (*triticum repens*) are conſiderably checked by it.

With

With reſpect to the *crop*, for which marl is ſet on, there is no general rule: it is ſometimes ſet on for turneps, ſometimes for barley, and frequently upon the ſecond year's lay for wheat; which laſt is, perhaps, the beſt management.

The *expence of marling* varies with the quantity ſet on, the diſtance to be carried, and the ſtate of the pit.—Suppoſe twenty-five loads an acre to be ſet on, the diſtance from a quarter to half a mile, and the expence of caſting three-pence a load; and that a team draws out and ſets on the twenty-five loads in two days:

	£.	s.	d.
25 loads, at 6*d.* for caſting, filling, and ſpreading - - -	0	12	6
Two days work of a team, at 10*s.*	1	0	0
Uncallowing, and extra wear and tear of implements and tools -	0	7	6
	£. 2	0	0

II. DUNGING. *The method of raiſing* dung upon the premiſes will appear under FARM-YARD MANAGEMENT.

The *application* of dung is, in the ordinary practice of the Diſtrict, to the TURNEP and the WHEAT crops.

For

For TURNEPS, the "ſtable-muck" is uſually carried out, from time to time, as it accumulates, or as the weather anſwers, in winter; and the "par-muck," wanted for this crop, early in the ſpring; and piled up in heaps in or near the intended turnep-cloſes;—a bottom being previouſly formed of marl, or "manner," about a foot thick, and heated up into a long-ſquare bed to ſet the pile upon.

The method of carrying out farm-yard dung, "when a farmer wants to get buſineſs forward," is generally this: Two fillers, a driver, and an unloader, with ſix horſes and three carts, are a ſet, for a ſhort diſtance: one of the carts being always in the yard—one on the road—and one at the dung-heap; it being a univerſal practice, which prevails throughout the Diſtrict, to ſet the carts by the ſide of the heap and unload them with forks.

The crime of drawing the load on to the heap is rarely committed in Norfolk. On the contrary, every lump is careſully broken, and the whole piled up light and even, with almoſt as much care and attention as farmers, in ſome places, beſtow upon their hay-ricks.

The

The ordinary day's work of the ſet above-mentioned is twenty-five loads; if the diſtance be very ſhort, thirty loads are frequently carried out: in this caſe, however, an additional boy is required to aſſiſt in levelling and forming the heap.

The filling is generally done by the load;---another admirable practice: the price one penny a load; a ſtriking inſtance of the low wages and hard work of this country.

This practice ought to be copied in every country; for it would, in moſt places, be cheaper to pay even three-pence a load, than to have the dung cart filled by the day; in which caſe, the team is ever ſtanding idle until the load be made up: whereas, when the filling is done by the load, that ſeldom happens. This accounts ſufficiently for the extraordinary number of loads carried in a day, in Norfolk.

For WHEAT, the remainder of the par-yard-muck is generally, in the ſpring, after the cattle are turned out to graſs, turned up into piles in the yards, where it remains until the ſoil be prepared to receive it;---the piles being by good farmers re-turned in the ſummer;

an

an operation, however, which is too frequently neglected.

Or, inſtead of turning the piles in the yard, they are ſometimes carried, at leiſure-times in ſummer, on to the land, and there piled afreſh: in either caſe, the compoſt, by the time it be wanted to be ſet on, is thoroughly mixed and digeſted.

The method of ſetting on dung is ſimilar to that of carrying-out: and from twenty-five to thirty loads are conſidered as a day's work for one team and two fillers: all ſet on in hillocks.

The *quantity* ſet upon an acre is, of courſe, proportioned to the quantity of land to be manured, and the quantity of dung to be ſet on: ten loads of good ſpit-dung, or twelve to fifteen loads of compoſt, is, perhaps, the *medial* quantity ſet upon an acre, for *turneps*:—for *wheat* a ſmaller quantity, and generally of a worſe quality, is uſually allowed.

Some few farmers manure their *clover-lays*, but this is by no means common; the application of dung being, as has been ſaid, in a manner wholly to the turnep and wheat crops.

It may alſo be ſaid, in general terms, that all the dung ſpread upon this Diſtrict is *plowed in*;

in: WHEAT is ſometimes *top-dreſſed* with it; but I have met with few inſtances of that ſpecies of management.

III. LIMING. It has already been obſerved under BUILDINGS AND REPAIRS, page 91, that the lime of this Diſtrict is burnt entirely from marl, with ſea-coal, in drawing-kilns: at leaſt I never obſerved a ſtanding kiln *.

The price varies, in a ſmall degree, in different parts of the Diſtrict: nine ſhillings a chaldron of thirty-two buſhels is a medium price. See note, page 91.

Lime, however, cannot, as has been before obſerved, be conſidered as a common manure in this Diſtrict; and while men will continue to draw general concluſions, from particular incidents or experiments, in matters of agriculture, more eſpecially on the effects of this myſterious manure, they will ever be of different opinions. Until the operation of lime upon ſoils, and vegetables, be better known than it is at preſent, it is in vain to *reaſon* about it.

* Namely, a kiln which is filled and burnt-out without drawing off any of the lime while burning.

If, by accurate and repeated experiments, a given lime be found to have no profitable effect upon a given ſoil, it would be abſurd to continue to lay that particular lime upon that particular ſoil. On the contrary, if, by a ſimilar courſe of experiments, a given lime be found to act profitably upon a given ſoil, it would be equally abſurd to let any *argument*, howſoever plauſible, prevent a man from reaping the advantage which ſo fortunate a circumſtance has thrown in his way.

There may be ſoils in Norfolk upon which the Norfolk lime would have no beneficial effect; but that there are ſome upon which it has a beneficial effect, I am certain; not only from my own experience, but from the practice of ſome of the beſt farmers in the Diſtrict; and this, too, upon lands which have been heretofore marled.

If by lime, or any other foſſil or extraneous manure, a Norfolk farmer could ſecure a crop of wheat without dung, the advantage would be very great. The whole ſyſtem of the Norfolk management hinges on the turnep-crop; and this depends, in a great meaſure, on the quantity of dung. No dung,—no turneps,—no

bullocks,—no barley,—no clover,—nor teathe upon the ſecond year's lay for wheat.

How much then it behooves the Norfolk huſbandmen, and turnep-farmers in general, to treaſure up dung for the turnep-crop. The loſs of a crop of wheat is only a ſingle loſs, and its effects momentary and certain; whereas the loſs of the turnep-crop deranges the whole farm, and its effects may be felt to the end of a leaſe.

If it be found, from adequate experience, that lime is inſufficient to anſwer the deſired purpoſe; and if it be found neceſſary to right management that a certain quantity of wheat ſhould be every year grown; other factitious or extraneous manures might, by a continued ſearch and a proper ſpirit of induſtry, be obtained.

The general *method of applying* lime is to let it fall in large heaps, and to ſpread it out of carts upon fallowed ground, either for wheat or for barley.

The quantity uſually ſet on—about three chaldrons an acre.

IV. Sowing soot. Near towns ſoot is uſed as a top-dreſſing for wheat, in February or March.

The time of ſowing is conſidered as very material. If it be ſown early, andthe froſt catch it, its ſtrength is thereby lowered: if late, and no rain falls to waſh it in, it is thought to be rather injurious than beneficial to the crop of wheat. And it is not, in any caſe, found of much, if any, ſervice to the ſucceeding crop of barley.

The method of ſowing it is extremely ſimple; and, in the only inſtance I ſaw the ſowing of ſoot practiſed, here, was very complete.

A favourable opportunity being embraced, when the wind blew gently and in the direction, or nearly in the ſame direction, as the lands or ridges lie,—the ſame waggon which brought it from Norwich, and which, until the opportunity offered, had ſtood ſafe under cover, was drawn, in a furrow, againſt the wind; while a man, ſtanding on the outſide of the waggon, ſpread the ſoot, with a ſhovel, ſeveral yards wide, on either ſide of him; the height of his ſituation at once enabling him to ſpread it wide, and even. As he reached

the

the windward end of the lands, the team wheeled round under the hedges, and took a freſh width.

The quantity ſet on was forty buſhels an acre.

V. MANURING WITH RAPE-CAKE.—Rape-cake is not a common manure in *this* Diſtrict; but it is uſed by ſome very good huſbandmen, towards the north coaſt: particularly by the judicious manager mentioned, in this ſection, under the article MARLING *; who has not only marled one hundred acres of land, which men of leſs judgment than himſelf conſidered as unimprovable by marl; but has, in the courſe of about twenty years, laid out eight hundred pounds in rape-cake: and his ſucceſs is a ſtriking evidence in favour of the doctrine above held forth; namely, that of applying the dung wholly to the turnep-crop, and dreſſing for wheat with ſome other manure.

He fetches the cake ſeven or eight miles, from Cromer or Blakeney; where it coſts him from forty ſhillings to three pounds a ton; with which he dreſſes three acres. Being pre-

* Mr. Edmund Bird, of Plumſtead.

viouſly ground, or broken into ſmall pieces, it is ſown, by hand, out of a common ſeed-box, upon the laſt plowing but one of a ſummer-fallow, for wheat.

VI. Malt-dust.—This is the moſt general adventitious manure of the Diſtrict; every malt-houſe furniſhing more or leſs of it; but the quantity, even upon the whole, being ſmall, it can only be of advantage to a few individuals.

For obſervations on marling, in South-Walſham Hundred, ſee Min. 55.

For a propoſed melioration of the ſoil by an improvement in the ſoil-proceſs, ſee Min. 77.

For obſervations on "claying," in Fleg, ſee Min. 106.

For experiment on the time of manuring graſsland, ſee Min. 127.

For the expence of marling, by water-carriage, ſee Min. 136.

22.

THE SEED-PROCESS.

I. BROADCAST may be ſaid to be the only method of ſowing in this Diſtrict:—and the plow (with ſome few exceptions) the only implement uſed in covering the ſeed.

II. DRILLING, notwithſtanding the ſoil is ſo peculiarly adapted to this operation, is entirely unpractiſed. The only exception to random-ſowing is,

III. DIBBLING—provincially, "dabbing."—It is performed in two ways; namely, by hand-dibbles, and by *dibbing-rollers*: the latter however being in the hands of very few, and being, I believe, uſed for wheat only, they will be mentioned more particularly under that article. But *hand-dibbles* are uſed for peas as well as for wheat. Indeed, in this Diſtrict, they are more in uſe for the former

than for the latter; the dibbling of which cannot be ſaid to have yet gained a footing in it: nor, perhaps, are the ſhallow ſoils of *this* part of the Diſtrict adapted to the practice, how excellent ſoever it may be upon deeper richer ſoils. Nevertheleſs, the practice being peculiar to Norfolk, (and the part of Suffolk adjoining to Norfolk) I embraced every opportunity of gaining what information I could reſpecting it, and was ſingularly ſucceſsful in my enquiries; the reſults of which appearing fully in Minutes made at the time of enquiry, I forbear ſaying any thing further upon the ſubject in this place.

IV. State of the soil.—The huſbandmen of Norfolk, notwithſtanding the natural dryneſs and lightneſs of their ſoil, are particularly careful not to ſow ſpring crops when the ſoil is what they call "cold and heavy."—When they are under the neceſſity of ſowing under this predicament, they endeavour to ſow above and harrow in the ſeeds;—whereas, if the ſeaſon be tolerable, it is a prevailing practice to plow in almoſt all kinds of grain. When the ſoil is ſeen to ſmoke after a ſhower at ſunriſe,

rise, it is considered to be in a desirable state for semination.

For the result of experiments with Mr. Duckett's Drill, see MIN. 19.

For observations on dibbling, see MIN. 23, 26, 28.

For reflections on regulating the time of sowing by the *season* rather than by the *sun*, see MIN. 125.

23. VE-

23.

VEGETATING-PROCESS.

I. IT HAS already been obſerved, that ROLLING crops is ſeldom practiſed in this country; unleſs to ſmooth the ſurface, in a ſlight degree, as a preparation for the ſithe.

II. HOEING is ſtill leſs in practice; except for TURNEPS, and ſometimes for the furrows of WHEAT.

III. HAND-WEEDING is, however, carefully attended to by farmers in general; and is, generally, performed by the acre:—a practice I have not met with elſewhere; though moſt eligible to be adopted in every Diſtrict: a farmer has not a more diſagreeable taſk than that of attending to weeders by the day. The price is, of courſe, proportioned to the foulneſs of the crop to be weeded:—from ſixpence to five ſhillings an acre is given.

IV.

IV. STONE-PICKING clover-lay is alſo generally done by the acre:—the price twopence to threepence an acre; the quantity of ſtones being in general ſmall.

V. The method of frightening ROOKS, in practice here, eſpecially when they take to patches of corn which are lodged before harveſt, is ſimply to ſtick up a tall bough in the part infeſted: if a gun be fired near the place, before the bough be ſet up, this ſimple expedient ſeldom fails of being effectual.

If rooks make an attack after ſeed-time, or when they take, generally, to the crop before harveſt, a boy is ſet to ſcare them; they being ſeldom attempted to be ſhot at in Norfolk; where a notion prevails, and is perhaps well-founded, that rooks are eſſentially uſeful to the farmer, in picking up worms and grubs; eſpecially the grub of the cock-chaffer, which, it is believed, is frequently injurious to the meadows and marſhes of this country.

VI. But whether rooks are, or are not, upon the whole, hurtful to the farmer, there are

are, in Norfolk, three ſpecies of animals, which, on a certainty, are deſtructive to him: theſe are HARES, PHEASANTS, and SPARROWS: the laſt of which are not leſs diſgraceful to the farmers themſelves, than the two former are to their landlords; and it would be very difficult to ſay, which of the three would, to a well-wiſher to huſbandry, and a ſtranger in the country, appear the moſt diſguſting ſight. I confeſs, that having preconceived ſome idea of the miſchiefs that muſt neceſſarily ariſe from an inordinate quantity of game, the clouds of ſparrows which are ſuffered to prey upon the produce of this country, were to me the greater cauſe of ſurpriſe.

But ſhameful as is the waſte ariſing from ſparrows, it is inconſiderable, when compared with the devaſtation which is cauſed by hares and pheaſants, in the neighbourhoods of kept-covers.

THE TURNEP-CROP, the main ſtem of the Norfolk huſbandry, falls a ſacrifice to *hares:* The quantity they *eat* is conſiderable, but ſmall in compariſon with the *waſte* they create. Before a hare will make her meal of turneps, ſhe will taſte, perhaps, ten, without meeting with one to her tooth. Her method of taſting, is

to

to peel off a piece of rind, about the ſize of a ſhilling, upon the top of the turnep; in order that ſhe may, with nicer judgment, make her eſſay upon the pulp: in doing this, a receptacle is formed for the rain, and a wound of courſe made for the froſt to operate upon: the part preſently becomes putrid; in a few weeks a general mortification takes place; and the turnep, thus partially bitten, is, as a *food*, entirely loſt to the farmer, and to the community.

THE WHEAT-CROP ſuffers principally from *pheaſants*: they begin with it the moment it is ſown, and prey upon it ſo long as it remains in the field; frequently follow it into the rick-yard; and, in ſevere weather, into the barn-yard: nay, I have known them, not ſatisfied with robbing the pigs and poultry, make their entry into the barn itſelf; where they have been found, by the farmer or his labourers, feeding in numbers upon the barn-floor. Theſe depredations are not confined to wheat; but are of courſe extended to other crops.

THE BARLEY-CROP ſuffers principally from *hares*; but upon this their miſchiefs are not ſo general

general as upon the turnep-crop. So long as the barley keeps young and ſucculent, they feed promiſcuouſly; but when it begins to run up to ſtem, they confine themſelves (if the piece be too large to keep the whole of it under) to particular parts; which, by being kept continually cropt as it ſhoots, affords them a freſh bite through the ſummer; ſo that towards the time of harveſt, when the crop begins to change, patches of half an acre or an acre, ſtill in a graſſy ſtate, become conſpicuouſly ſcattered over the piece.

Whether the crop be of barley or of wheat, it receives, throughout, material injury by the *tracks* made acroſs it.

THE CLOVER, alſo, receives injury from *hares*, by the young heads being eaten down to the crown in winter, and by the crop being checked in the ſpring; thereby ſuffering the drought to get poſſeſſion of the ſoil. But the clover-crop receives ſtill greater injury from *pheaſants*; which are not content with the foliage, but feed on the vitals of the plant; pecking out its "heart," as it is emphatically called: namely, the center of the crown of the root.

It

It is, indeed, an opinion among farmers, who are unfortunately fixed near kept-covers, that the pheaſants do more injury to their clovers, than they do either to their turneps or their barley; or, ſome are of opinion, even to the wheat-crop; for the loſs of the clover by pheaſants, deranges their farm in a ſimilar, though not in ſo ſenſible a manner, as the loſs of their turneps by hares; whereas the loſs of the wheat, though great in the firſt inſtance, is leſs injurious in its conſequences.

To a perſon who has not been eye-witneſs to the deſtruction wheh accompanies an inordinate quantity of game, the quantity of damage is in a manner inconceivable.

Let us ſuppoſe that a ſuite of kept-covers give protection to five hundred brace of hares: one hundred and fifty brace, it is confidently aſſerted, have been counted, at one time, on one ſide of a ſingle cover. I have myſelf ſeen from fifty to a hundred brace under the eye at once.

Let us further ſuppoſe, that five hares devour, or deſtroy, as much food as one of the ſmall heath ſheep of this country: this, if we may depend on an accurate experiment made on the

quantity

quantity of turnep eaten by one of theſe glut-tonous animals in a ſtate of confinement, is, as the former, a reaſonable ſuppoſition.

Any man, converſant in rural affairs, can form ſome idea of the havock which two hundred wild heath ſheep, turned looſe into a fence-leſs corn-country, muſt neceſſarily make among the crops. But if, in addition to theſe, a thou-ſand head of poultry were at the ſame time let looſe, it would be no difficult matter for any man to conceive a pretty ſtrong idea of the conſequences.

From what I have myſelf ſeen, and from what I learnt from thoſe whom woful expe-rience has taught, I am led to believe, that there are not leſs than one thouſand acres of tur-neps, one thouſand acres of clover, one thouſand acres of barley, and one thouſand acres of wheat, annually deſtroyed, or materially injured, in this county, by hares and pheaſants.

My calculation is this:—Norfolk contains, as nearly as this calculation requires, one million acres of land. Suppoſe that half the county conſiſts of marſhes, meadows, ſheep-walks, and other graſslands, heaths, commons, wood-

lands,

lands, roads, and hedge-rows, there remains five hundred thouſand acres of arable land.

This however is, I believe, too ſmall a proportion; we will therefore, to eaſe the calculation, and to render it, perhaps, more accurate, eſtimate the quantity of arable land at ſix hundred thouſand acres; which being divided agreeably to the courſe of huſbandry moſt prevalent throughout the county, affords, annually, one hundred thouſand acres of wheat, two hundred thouſand acres of barley, one hundred thouſand acres of clover, and from fifty to one hundred thouſand acres of turneps.

I am clearly of opinion, that a quantity equal to one acre in a hundred acres of wheat, to one acre in two hundred of barley, to one acre in a hundred acres of clover, and to more than one acre in a hundred acres of turneps, is wholly deſtroyed or irreparably injured by hares and pheaſants.

I do not mean that a thouſand diſtinct acres of any of theſe crops can be picked out; but that there is, upon the whole, a deſtruction adequate to the produce, on a par, of a thouſand acres.

	£.	s.	d.
1000 acres of wheat, worth on a par of crops, in a par of years, 6l.	6,000	0	0
1000 acres of barley, at 4l. 10s.	4,500	0	0
1000 acres of clover, and the consequential damages	5,000	0	0
750 acres of turneps, and the consequential damages, at 10l.	7,500	0	0
£.	23,000	0	0

If we view this inordinate quantity of game in a moral light, its evil consequences, whether we consider them in a private or a public view, are ſtill greater.

There are an hundred, perhaps five hundred, men in this county whoſe principal dependence, for their own and their family's ſupport, is on poaching. The coal-trade and fiſheries are not more certain nurſeries of ſeamen than kept-covers are of poachers. An exceſſive quantity of game is not more certainly deſtructive of the crops they have acceſs to, than it is inevitably productive of idleneſs and diſhoneſty among the labourers of the neighbourhood. Two or three ſhillings for a pheaſant, the uſual price, I underſtand, given by the wholeſale dealers in Norwich, is a temptation,

tion, to a man who is not ſtrictly honeſt and induſtrious, too powerful to be withſtood.

For a while he goes on in ſecurity: but his ways and his haunts being at length diſcovered, he is taken; and, if not knocked on the head in his ſcuffle with the keepers, ſent to gaol.

Having lain here his wonted time, he ſallies forth again, not only a more deſperate poacher, but an incorrigible rogue, fit for any thing.

Having been two or three times taken, and having lain upon the whole, perhaps, twelve months in gaol; having learnt to live by night, and to idle and ſleep away the day; he cannot reverſe his way of life; and he is become too notorious to carry on, any longer, his trade of poaching.

His caſe now becomes deſperate; and if he is not fortunate enough to get into a gang of ſmugglers, he takes, of courſe, to houſe-breaking, or ſome other high-way to the gallows.

Nor is this the ſum of miſchief:—A gentleman who preſerves an inordinate quantity of game upon his eſtate, is, in the nature of things, perpetually in hot water, with the yeomanry and

minor gentlemen of his neighbourhood. And for what advantage? A mere childiſh gratification—a toy.—The child has its bird of pith, the ſchool-boy his daws and magpies, ladies their aviaries, and gentlemen their kept-covers;—merely for the ſake of ſhewing off the pretty creatures; or of ſaying that they have got them in their poſſeſſion.

In point of real diverſion, kept-covers are utter enemies. What hounds can hunt in covers with a thouſand hares in them? And the diverſion of ſhooting pheaſants in a kept-cover, is juſt equivalent to that of ſhooting ſmall-birds in a rick-yard, or poultry at a barn-door.

Theſe obſervations do not ariſe from an antipathy to rural diverſions, nor, I flatter myſelf, from an overweening fondneſs for rural economy. I have profeſſed myſelf upon a former occaſion, and ſtill profeſs myſelf, a friend to both; and as ſuch I beg leave to intimate to gentlemen of large eſtates, that if, inſtead of laying waſte the lands immediately round their reſidences, they would ſcatter ſmall covers over different parts of their eſtates; more eſpecially by the ſides of rivulets in which water-creſſes abound;

abound; and if, inſtead of employing in the ſhooting-ſeaſon half-a-dozen keepers night and day, at a great expence to themſelves, and to the certain injury of the health of thoſe whom they employ in this hazardous and diſgraceful buſineſs, they would permit ſuch of their tenants as choſe to take out licences to ſport upon their reſpective farms, and the unprotected farms in their neighbourhoods; I am clearly of opinion, I am poſitive, they would have a ſufficiency of game, an increaſe of diverſion, an increaſe of income, and, what is of much more value to a man whom fortune has placed above dependency, an increaſe of reſpectability and perſonal happineſs.

To ſay that the game-laws are diſgraceful to the laws of this country, would only be repeating what has been ſaid a hundred times, and by the firſt characters in it; nevertheleſs they ſtill remain an abſurdity in Engliſh juriſprudence*.

* At preſent a merchant or monied man, let him be worth an hundred thouſand pounds, and let him have an hundred men of landed property ready to give him permiſſion to ſport over their eſtates and manors, he cannot do it without being guilty of a breach of the laws of his country. Nay, this man, nor any man, though he be poſſeſſed of

The legiſlature having lately thought fit to make rural diverſions an object of taxation, it might now be impolitic to make game altogether what it ought to be—private property. Nevertheleſs it ſtill ſtrikes me, as it did long before the licences for ſporting were inſtituted, that game might be rendered a public and private good.

Wherever perſonal property is aſcertained, there, alſo, let a private property in game take place; the property being inveſted in the proprietor of the land, not in the occupier of it; and let every proprietor, great or ſmall, have a full and uncontroulable right to the game he can *find* upon his eſtate.

But the moment he ſteps off his own land, whether on to the private property of another, or into a foreſt or mixed property, though full permiſſion be firſt had from the proprietor or keeper, let him become liable to fine or impri-

the clear fee-ſimple of a landed eſtate of 99l. a year, remains in the ſame predicament. Whilſt another man, perhaps not worth a ſhilling, but becauſe he has in his poſſeſſion an eſtate of one hundred a year, though mortgaged for twice its value, is entitled to the privilege of ranging with impunity.

ſonment;

ſonment; provided he do not annually pay, towards the ſupport of the ſtate, five guineas, or ſome greater ſum.

Let this five guineas, or greater ſum, qualify him fully to ſport on foreſts, waſtes, and all undivided property, *without leave* from any perſon whatever; as well as to ſport, *with permiſſion*, over any man's private eſtate.

But, notwithſtanding his qualification, let him, for ſtarting game, without permiſſion, upon private property, *with intent to kill*, be guilty of an act of larceny or felony, and, as a larcenor or felon, let him be puniſhed by the ordinary laws of his country.

Objections might be raiſed to this plan; but not one, I will venture to ſay, which might not readily be obviated.

24.

HARVEST-PROCESS.

THE WHOLE buſineſs of harveſt is done by harveſt-men; no part of it, generally ſpeaking, being done by the acre.

The price of a harveſt-man is thirty-five to forty ſhillings for the harveſt, be it long or ſhort, with his full board ſo long as harveſt-work continues.

This is, in any year, a diſagreeable circumſtance; and, in a long harveſt, extremely tedious: in the backward harveſt of 1782 ſome farmers boarded their harveſt-men ſeven weeks, two or three of which, perhaps, they lay in a great meaſure idle.

What renders the expence exceſſive, is not altogether the number of appetites to be palled, but the extravagant manner in which they are, by cuſtom, expected to be gratified. In liquor, however, the Norfolk labourers are leſs waſteful than are the labourers of ſome other places.

The

The diſagreeableneſs of boarding apart (and this might no doubt be avoided), the buſineſs of harveſt goes off with ſingular alacrity in Norfolk. Every man turns his hand to any work which is going forward. To whatever requires the quickeſt diſpatch, whether it be reaping, mowing, cocking or carrying, a farmer can direct his whole force; or ſuch part of it as he may judge neceſſary: an advantage which cannot be had when reaping and mowing are done by the acre; the reapers, more eſpecially, being as uſeleſs to a farmer in this reſpect, as if they were not employed upon his farm.

What adds eſſentially to the diſpatch, and conſequently to the pleaſure, of harveſt, is the comparative alertneſs and activity of the Norfolk harveſtmen; who, from four in the morning until dark, their meal-times excepted, work, not as for their maſters, but as for themſelves.

While, however, I thus pay due praiſe to the laborioufneſs of the Norfolk workmen, truth obliges me to ſay, that in many inſtances their work is done in a looſe, and, what in ſome places would be called, a ſlovenly manner.

But

But this is a natural, or at leaſt a uſual, conſequence of diſpatch. A man who reaps, for inſtance, from half to three quarters of an acre a day, cannot be expected to do his work ſo neatly, to lay his corn ſo ſtraight, and bind his ſheaves ſo tightly, as he who only reaps one-third of an acre.

Were it not for this extraordinary diſpatch, I do not ſee how the crops of the Diſtrict could be harveſted. There are, it is true, a few men, from Suffolk, Cambridgeſhire, &c. hired annually at Norwich, and brought into it for the harveſt; but their number is inconſiderable, compared with the numbers which are employed in other arable countries; where they paſs from place to place, as the harveſt ripens; whereas here they are at the end of their journey: an extenſive tract of arable country on one ſide, and the ſea on the other. The beſt reſource which this country has is in its numerous manufacturers, ſome few of whom can, in neceſſity, turn their hands to harveſt-work.

One cuſtom of this country reſpecting harveſt-men is very reprehenſible. Their work is conſidered to be merely that of *harveſting*;

and,

and, if the weather be ſuch that this does not afford them full employment, they conſider themſelves as having, from ancient cuſtom, a right to refuſe to do every other kind of work. It is, I am ſorry that truth obliges me to relate it, no unuſual thing for parties of them to be playing at cards in a barn, while the turnep-crop is receiving irreparable injury for want of their aſſiſtance: a crime, in this country, which both maſter and men ought to be equally aſhamed of: and it certainly would be worth the farmer's while to give their men an advance of harveſt-wages, rather than to ſuffer ſo diſgraceful a practice. Were it not for the manufacturers and other handicraftmen, the later-ſown crops of turneps would ſuffer greatly during harveſt. Some years, it is true, harveſt-men have little leiſure for turnep-hoeing; but, in others, they have a great deal; and, in every year, a ſtrong morning dew, or a flying ſhower at the time of carrying, afford apt opportunities for this neceſſary operation.

The practice of trotting with empty carriages has already been noticed: it is on no occaſion more valuable than in harveſt; and a cuſtom among farmers of driving their own harveſt-carriages is not leſs excellent.

Looſe

Looſe corn of every kind is univerſally trodden in the barn with horſes; and, what is perhaps ſingular to Norfolk, horſes are ſometimes employed in treading large ricks.

Ricks in general, however, are carried up too narrow and too high to be trodden with horſes; their roofs, more particularly, being frequently drawn up to an unneceſſary and, indeed, ridiculous height; thereby incurring unneceſſary labour in topping-up, and an unneceſſary quantity of thatch and thatching.

The price of the laſt, however, being in a manner fixed at ſix-pence a yard in length, be the roof high or low, deep or ſhallow, the loſs in this falls rather upon the thatcher than the farmer.

For the minutiæ of the harveſt-proceſs, ſee the ſeveral crops:—namely, WHEAT, BARLEY, &c. &c.

25.

FARM-YARD MANAGEMENT.

THIS HEAD may be divided into,

1. Barn-management; and
2. Straw-yard management.

I. BARN-MANAGEMENT.—Every thing is thraſhed by the coomb of four buſhels; little or no thraſhing being done by the day.*

It is obſervable, that notwithſtanding the ſpaciouſneſs of the Norfolk barn-floor, the labourers in general object to their thraſhing two in a barn; rather chooſing to work ſingly:—this, perhaps, is principally owing to the particular method of thraſhing with two on a floor; which is, to turn their backs on each other; working as ſeparately as if they thraſhed on ſeparate floors: the method of ſtanding face to face, and giving ſtroke for ſtroke, being ſeldom if ever uſed.

Every thing is thraſhed rough; no ſtraw bound; even wheat-ſtraw is uſually ſhook off the floor, looſe, with a common pitching-fork.

* For the prices, ſee LIST OF RATES.

The

The method of dreſſing corn, here, is ſingular, and, as an eſtabliſhed and invariable practice, is, I believe, peculiar to this country; in which there is not, perhaps, one ſingle *wind-fan* of any conſtruction; and I never ſaw the natural wind made uſe of in the dreſſing of corn.

In Weſt-Norfolk, there are ſome ſail-fans; but, in this Diſtrict, the invariable practice is to ſeparate the corn from the chaff, by throwing it from one end of the floor toward the other with a ſhovel.

In this operation, the prime grain, being heavieſt, flies fartheſt; the light corn and "coſhes" next: to theſe ſucceed the broken ears and prime chaff; and to this the ſmall chaff and duſt; which, being thrown againſt a gentle draught of air, when it can be had, is generally carried back pretty plentifully towards the face of the thrower, who uſually guards his eyes with a crape or other partial covering.

To avoid the inconveniency of the duſt as much as may be, and to ſeparate as clean as poſſible the corn and chaff from the "colder," namely,

namely, the ears, ſhort ſtraws, &c.—the rough corn, after the ſtraw is ſhook off and raked out in the uſual manner, is riddled through a fine riddle upon a horſe placed near the lee-ward-door; by which means a principal part of the duſt, and, if the draught of wind be ſtrong, much of the worſt of the chaff is got rid of. This not only renders the caſting more agreeable, but leſſens the quantity to be thrown.

The art of throwing is a ſlight which can be learned from practice, only. A light, hollow wooden ſhovel is the tool made uſe of in this operation. This is about half-filled with corn; which, to make the caſt more true and certain, is ſhook into the center of the mouth of the ſhovel. This is done by a ſingle motion, with the arms hanging ſtraight down, as if with an intention to eſtimate the weight of the corn in the ſhovel. The equipoiſe being thus got, the contents are delivered by a ſweeping motion of the arms and the body; ſcattering the grain in a long, narrow heap, of a ſemi-lunar form.

The chaff and the light grain being removed, the broken ears and "coſhes," name-

ly,

ly, the heavy grains whoſe chaff ſticks to them, are ſeparated by a riddle and the wicker knee-fan.

If the head-grain be not ſufficiently cleanſed by one caſting, it is returned in a ſimilar way to the other end of the floor.—Finally, the weed-ſeeds and ſmall corn are ſeparated in the uſual manner, by the ſkreen; and the head-grain meaſured up, in a way as ſingular as that by which it is ſeparated.

In one part of the kingdom the buſhel is filled with a ſhovel—in another with a ſhoal—in a third with a ſieve; but here no tool whatever is made uſe of; the buſhel itſelf being thruſt into the heap, and then filled up and levelled fit for the ſtriker with the hands alone; under a thorough conviction that corn may be meaſured lighter in this way than in any other way whatever.

All corn is ſent to market in "coomb-bags," and generally with four buſhels in each bag.

The *meaſure* of Norfolk is about eight gallons and a half to the buſhel, and twenty-one coombs to the laſt: that is, one coomb, or one buſhel, in twenty is thrown in. This cuſtom has probably been introduced by the corn-factors,

tors, under a pretence of loſs of meaſure in ſending their corn to market. Be this as it may, the allowance is made to the corn-buyers only: for in dealings between farmer and farmer for ſeed, &c. the "bare" meaſure only is given.

It is a practice among Norfolk farmers, as prevalent as it is judicious, not to ſtore up dreſſed corn; but either to let it remain in the ſtraw, or, if this be wanted, to keep it a few weeks in the chaff till a fair market offers; frequently ſtowing it away in a receſs cut out of the face of the mow, for this purpoſe.

II. STRAW-YARD MANAGEMENT—The Norfolk huſbandmen are, in general, very attentive to ſeparating their ſtock in the ſtraw-yard. For this purpoſe their "par-yards" are *parted* into ſundry diviſions with faggots, in the manner already mentioned under the ſubject REPAIRS.

One diviſion is ſet apart for the cows—another for the "buds" or yearlings,—ſometimes a third for the two-year-olds,—and, when turneps are brought into the yards, a fourth for the bullocks.

By this judicious management the weak is placed out of the power of the ſtrong, and the

colder and beſt of the ſtraw may be given to ſuch as require the beſt keep.

Sometimes the ſtraw is given to the cattle in "bins;" ſometimes laid in heaps; and frequently for bullocks at turnep, it is ſcattered looſe about the yard.

Upon the whole, the Norfolk farmers may be ſaid to be waſteful of ſtraw; more eſpecially at the beginning of the winter, when it is frequently thrown into the empty yard entirely waſte as to fodder: this, however, is not looked upon in ſo improvident a light in Norfolk as in moſt other places; for here a notion of the utility of having plenty of ſtraw among dung prevails ſo ſtrongly, that the ſtraw which is *eaten* by cattle is conſidered by ſome men, as being in a manner waſted as to manure.

For further obſervations on this ſubject, ſee MIN. 73.

26.

MARKETS.

NORFOLK, taken collectively as a county, is ſingularly well-ſituated for markets: the Norwich manufactory is productive of a regular internal conſumption; while Yarmouth, Lynn, the ſmaller ports, Smithfield and St. Ives, take off the ſurplus produce.

SMITHFIELD is the grand market for cattle and ſheep, and the SEA-PORTS for barley. Wheat is principally bought up by the MILLERS, and the ſurplus of what is conſumed in the country ſent to the LONDON MARKET in flour. Some wheat in grain is alſo ſent to Bear-Key.

With reſpect to veal, pork, lamb, and ſometimes mutton, a ſingular practice prevails in Norfolk; moſt eſpecially at the NORWICH market, which is ſupplied with the above articles entirely by the farmers; who, for fifteen or twenty miles round, are moſt of them capable of dreſſing a calf, a lamb, or a ſheep; which, with poultry made ready for the ſpit,

are carried weekly by themſelves, their wives, their daughters, or their ſervants, to Norwich market; which, whether for plenty or neatneſs, is, I believe, beyond all compariſon, the firſt in the kingdom.

Theſe articles are brought to market in panniers—provincially, "peds"—either on horſeback, or in market-carts (a conveniency which few farmers are not poſſeſſed of) and placed in rows in the "ped-market;" a ſpacious triangular area in the center of the city; the market-women ſitting in a row on one ſide of the peds, while the other ſide is left free for their cuſtomers.

Whether viewing the neatneſs of the market-women themſelves, the delicacy of their wares, or the cleverneſs which, through habit, many of them are miſtreſſes of in the diſpoſal of them, the Saturday's market of Norwich exhibits a very agreeable ſight.

It is not neceſſary to add to this account of the ped-market, that the buſineſs of a butcher in Norwich is confined, in a great meaſure, to beef and a little mutton. Indeed the trade of a butcher is not, in any part of the county, a good one; the principal farmers butchering

their

their own meat; and the ſmaller ones who kill for the ped-markets, living chiefly on the offal and the unſold joints.

The corn-market of Norwich is likewiſe a very capital one. But the buſineſs being chiefly done at the Inns, it makes no ſhow. The river Yare, which is navigable from thence to Yarmouth, affords an eaſy conveyance of the ſurplus corn bought up at Norwich, for the London market.

The principal market of *this* Diſtrict is that of NORTH-WALSHAM;—a very good one: great quantities of barley and wheat are bought up weekly, and the ſurplus of the home conſumption either ſent down the north river navigation to Yarmouth, and from thence ſhipped off for the London or other market; or is delivered by land carriage at CROMER or MUNSLEY, and there ſhipped off.

When the ports are open for exportation, great quantities of corn are ſent immediately from Norfolk to HOLLAND, and other FOREIGN MARKETS.

One general obſervation remains to be made reſpecting the markets of Norfolk: they are in general AFTERNOON-MARKETS; no buſineſs be-

ing done in the corn-market, at leaſt, until three or four o'clock in the afternoon. The market of Norwich is, however, an exception to this cuſtom, and there may be other forenoon markets in the county.

Many conveniences and advantages accrue to the farmer from afternoon-markets: he has all the morning to himſelf: he dines with his family; and ſees his men at work, and his teams out for their afternoon journey, before he ſets off for market. His market-expences are curtailed, and a habit of lounging out a whole day, idly, prevented. The only inconveniency incurred by afternoon-markets, to a farmer, is the *neceſſity* of returning home in the dark of winter's evenings: this, however, is an inconveniency which farmers in general who go to market at ten o'clock in the morning *voluntarily* diſpenſe with. The Inn-keepers may be ſaid to be the only ſufferers by afternoon-markets.

The FAIRS of Norfolk are not ſo conſiderable as they are in ſome other counties; except the fair of St. Faith's, which is one of the largeſt fairs in the kingdom.

But

But as I made a point of attending ſome of the principal fairs, and of minuting the obſervations which ſtruck me while they were freſh in the memory, I forbear ſaying any thing further reſpecting them in this place; but refer to the Minutes themſelves; which I publiſh the rather, as nothing gives a more lively and juſt idea of what may be called the ECONOMY OF LIVE-STOCK in a given Diſtrict, than the buſineſs which paſſes at the fairs of that Diſtrict. Beſides, fairs and markets are the great ſtumbling-blocks to gentlemen-farmers; who, through want of *affability*, or want of *courage*, remain in general entirely ignorant of the buſineſs of fairs and markets; even when they have made conſiderable progreſs in the buſineſs of the farm.—This is my only motive for giving the minutiæ of the Minutes as they ſtand in my Minute-book; for on a ſubject ſo totally new as this is, I believe, to written agriculture, every incident becomes valuable; I mean to thoſe, whom, in this particular, I moſt eſpecially wiſh to inform.

For obſervations on St. Faith's fair (1781), ſee MIN. 27.

For obſervations on Holt fair, ſee MIN. 39.

For obſervations on Walſham corn-market, ſee MIN. 80.

For obſervations on Ayleſham fair, ſee MIN. 94.

For obſervations on Norwich clover-ſeed market, ſee MIN. 101.

For obſervations on Walſham fair, ſee MIN. 105.

For obſervations on Worſtead fair, ſee MIN. 107.

For obſervations on Ingham fair, ſee MIN. 112.

For general obſervations on Norfolk fairs, ſee MIN. 112.

For obſervations on Cawſton ſheep-ſhow, ſee MIN. 123.

For obſervations on St. Faith's fair (1782), ſee MIN. 134.

For ſundry obſervations on Smithfield market, ſee the article BULLOCKS.

27.

WHEAT.

IN TAKING a ſyſtematic view of the culture of this crop, it will be proper to conſider,

1. The ſpecies of wheat uſually cultivated in Norfolk.
2. The ſoils on which it is uſually grown *.
3. The ſucceſſion; or the crop, &c. which wheat uſually ſucceeds, in the management of Eaſt-Norfolk.
4. The ſoil-proceſs,
5. The manure-proceſs,
6. The ſeed-proceſs,
7. The vegetating proceſs,
8. The harveſt-proceſs,
9. The farm-yard proceſs,

} in practice for wheat in Norfolk.

10. The markets for wheat.

I. THE SPECIES. — The long-eſtabliſhed "ſtock" of this country is the "Norfolk red,"—which is ſaid to weigh heavier than any other wheat which has yet been introduced

* The MANURES applied for WHEAT appear under art. MANURE-PROCESS.

into

into the county. Its appearance, however, is very much againſt this aſſertion; for it is a very long bodied, thin grain, partaking more of the ſhape of rye, than of well-bodied wheat.

A favourite new ſpecies has lately been introduced, under the name of the "Kentiſh white coſh." The grain is plump and red; but the "coſh," or huſk, white; reſembling very much the velvet wheat of Surrey and Kent. The "caſt," or yield of this is allowed to be greater than that of the "old red,"—and the millers begin to like it nearly as well;—though, on its firſt introduction, ſome fifteen or twenty years ago, they were, or affected to be, prejudiced againſt it.

A remarkable circumſtance is ſaid to take place, reſpecting this ſpecies of wheat, when ſown repeatedly in Norfolk. Though the coſh be perfectly white on its introduction, and though it be ſtudiouſly kept ſeparate from the red coſh; yet, by being repeatedly ſown, year after year, it loſes the fairneſs of its huſks; which firſt become "pied," and, at length, change entirely to a clear red, reſembling thoſe of the old Norfolk ſtock. I have ſeen them in their pied ſtate, and have been aſſured

by

by men of obſervation, that they acquire this ſtate, though kept perfectly ſeparate from the red-coſh variety. If this be really a fact, it is a ſtriking evidence of the power of ſoils and ſituations, in eſtabliſhing what the botaniſts call *varieties*, in the vegetable kingdom.

II. The soil.—In this, as in moſt other Diſtricts, wheat is ſown on almoſt every ſpecies of ſoil. But the farmers here, as in other places, too frequently find out, at harveſt, that a full crop of barley, or oats, would have paid them better than half a crop of wheat.

In the northern parts of this Diſtrict there are many very light-land farms,—and ſome in the central parts of it—which paſs under the denomination of barley-farms: and on which the occupiers judiciouſly content themſelves with a ſmall proportion of wheat.

But the ſouthern parts of the Diſtrict, and the ſouth-eaſt parts of the county in general, enjoy a ſtronger, richer ſoil, well adapted to the propagation of wheat.

III. The succession.—In the regular courſe of huſbandry, the wheat-crop ſucceeds inva-

riably

riably the *ſecond year's lay*; but, as has been already intimated, the regular ſucceſſion is in a greater or ſmaller degree broken into by farmers in general; and it ſometimes happens that wheat is ſown on the *firſt year's lay*—ſometimes after *peas*, or after *buck harveſted* or *buck plowed under*, or *turneps*, or ſometimes on a "right-out ſummerly," or, *ſummer fallow*. But it may be ſaid, without hazard, that three-fourths, perhaps nine-tenths, of the wheat ſown in *this* part of the Diſtrict, is ſown on *the ſecond year's lay*.

IV. SOIL-PROCESS,—This varies with the nature and ſtate of the ſoil,—the nature of the preceding crop,—the circumſtance of the farm,—and the ſkill and judgment of the farmer.

1. The prevailing practice is to make a "backward ſummerly"—a ſort of *autumnal fallow*—of the SECOND YEAR'S LAY.

When feed is ſcarce, the ſecond year's lay is ſometimes ſown on the "flag;" that is, upon the unbroken furrow of *one plowing*; eſpecially if the ſeed be intended to be dibbled in. But, for broadcaſt-ſowing, neither

the

the depth of the Norfolk ſoil (except in ſome few places) nor the conſtruction of the Norfolk plow, will admit, with any degree of propriety, of this (in many parts of the kingdom) moſt excellent practice.

THE BACKWARD SUMMERLY of the SECOND YEAR'S LAY, is made in different ways.

Some farmers plow only twice; rice-balking the firſt time very fleet. When the flag is rotten, they harrow acroſs and ſet on the muck; and, the laſt plowing, go a full depth; laying the ſoil in "warps," or wide flat beds, on which they ſow the ſeed above-furrow. This, however, is conſidered, as it really is for wheat, a ſlovenly practice.

Others plow three times: the firſt fleet; the ſecond a full pitch; the laſt of a mean depth; with which laſt plowing the ſeed is plowed in under-furrow. The ſoil is harrowed between the plowings, and the dung in this caſe ſet upon the ſecond harrowing, and plowed in with the ſeed.

But the practice of thoſe who excel in their profeſſion, and who are, in their neighbourhood, looked up to as ſuperior huſbandmen, is this:

His

His ſecond year's lays having finiſhed his bullocks, and brought his ſtock-cattle, and horſes, through the fore-part of the ſummer; and his firſt year's lays having been mown, and ready to receive his ſtock; the farmer begins to break up his "olland" for wheat, by rice-balking them as fleet as poſſible, ſo as to carry an even regular furrow; embracing his opportunity when the ſurface has been moiſtened by a ſummer ſhower.

In this rice-balked ſtate his ſummerlies remain until the wane of harveſt; when his corn being chiefly in, and his horſes more at leiſure, he harrows, and afterwards plows his ſummerlies acroſs the balks of the firſt plowing; bringing them up this ſecond plowing the full depth of the ſoil.

On this plowing he ſpreads his manure, harrows, and immediately "ſcales" it in by another fleet plowing.

This third plowing has ſeveral good effects: it mixes, effectually, the ſoil and the manure; cuts off and pulverizes the upper ſurfaces of the furrows of the ſecond plowing; and by doing this, moſt effectually eradicates or ſmothers ſuch weeds as had eſcaped the two former

former earths; and, at the same time, by excluding the air from the under-parts of those furrows, renders the whole as mellow and friable as a summer-fallow.

In this state it lies until seed-time; when it is harrowed, rolled, sown, and gathered up into ridges of such width as is agreeable to the nature of the soil, or the skill or fancy of the farmer.

Those of six furrows are the most prevalent; but there are very good farmers who lay their wheat-land into four-furrow, and others into ten-furrow, ridges; which last they execute in a style much superior to what might be expected from *wheel*-plows.

But the six-furrow work is that in which the Norfolk plowmen excel. It is generally performed with three plows in this manner: the first sets out the ridge, the second takes the middle-bout, and the last makes up the furrows. The best plowman is of course put last, the second first, and the worst takes the middle-bout. The first plit is sometimes turned partially back by the second, by letting the off-horse go back *in* the first-made furrow; and sometimes the first furrow is left entirely open,

by

by letting the off-horſe go back *out* of the firſt furrow. The laſt way makes the ridges wider, and rids more ground; but the firſt ſtirs the ground better, and is thought to diſtribute the ſeed more evenly. The plowman who goes laſt and makes up the furrows, divides his horſes by means of a long "horſe-tree," or middle whipping; ſo that each of them takes an outſide furrow, while he and his plow alone occupy the furrow he is making up. This anſwers two good purpoſes:—it gives the plowman a free ſight, and prevents the horſes from treading the ridges. If the ſoil be wet and poachy, ſome judicious farmers divide the middle-bout horſes in the ſame manner. The horſes are of courſe ſomewhat aukward at firſt ſetting-out, but they ſoon become tractable, and much more ſteady than when they ſtagger about and joſtle each other in the ſame furrow. The four-furrow ridges are plowed in a ſimilar manner by two plows.

There are ſeveral advantages ariſe from this method of laying-up narrow ridges. The whole buſineſs is carried on in regular progreſſion. The ſeeds-man begins on one ſide of the cloſe, and ſows towards the other with

as

as little interruption as he could do for one plow. For although two or three plows are employed in the ſame piece, there are no freſh ſettings-out, nor any croſs-work at laſt; ſave ſuch as is neceſſarily given by the figure of the field. There is much time ſaved (more eſpecially when wheel-plows are uſed) in altering the plows; and the whole piece is equally well executed; each ridge being ſet out, and each furrow made up, by the ſame men.

The Norfolk plowmen, when plowing in wheat, carry very narrow furrows; ſo that a ſix-furrow ridge, ſet out by letting the off-horſe return *in* the firſt-made furrow, does not meaſure more than three feet eight or nine inches.

2. AFTER THE FIRST YEAR'S LAY the ſeed is generally ſown on the flag.

3. AFTER PEAS, the farmer gives one two three or four plowings, and manages in every other reſpect the ſame as he does after the ſecond year's lay.

4. AFTER BUCK HARVESTED, he is more confined in reſpect of time, and ſeldom gives more than two, ſometimes but one, plowing. If he plow twice, he ſpreads his manure on the ſtubble, ſcales it in fleet, harrows, rolls, ſows and gathers up the ſoil a mean depth into

narrow work. If he plow but once, he, in like manner, ſpreads his manure on the ſtubble; and, what ſeems very extraordinary to a ſtranger, ſows his ſeed among his manure; plowing the whole in together, and gathering his ſoil up into narrow ridges; as if it had undergone the operations of a fallow.

There is, however, one very great evil attends this method of ſowing wheat after buck; eſpecially where rooks are numerous. The buck which is neceſſarily ſhed in harveſting the crop, and which is, of courſe, plowed under with the manure and ſeed-wheat, vegetates the ſucceeding ſpring, and becomes a weed to the wheat; and, what is of ſtill worſe conſequence, ſhould rooks get a haunt of it, they will not only pull the buck up by the roots, but the wheat-plants likewiſe; ſo as to leave large patches almoſt deſtitute of plants. But, by firſt ſcaling in the manure and ſelf-ſown buck very fleet, and harrowing the ſurface fine, the buck vegetates, and the evil conſequence is thereby, in a great meaſure, prevented.

5. After buck plowed under.—This, as well as the preceding, is a favourite practice among good farmers; and the Norfolk plowmen perform the operation of plowing the crop under in a maſterly ſtyle. They ſweep it

down

down by the means of a bruſh or broom, made of rough buſhes fixed to the front of the "fickle-tow;" or fore-tackle of the plow, between the wheels; ſo as to bear down the buck without lifting the wheels of the plow from the ground. To prevent this, when the buck is ſtout, it is firſt broken down by a roller, going the ſame way as the plow is intended to go. A good plowman will tuck it in ſo completely, that ſcarcely a ſtalk can be ſeen.

The ſurface is, ſometimes, harrowed and rolled after plowing: ſometimes left rough: the former is perhaps the moſt eligible management.

In either caſe, the ſoil remains in that ſtate until after harveſt, when it is harrowed and taken up a full pitch, acroſs the warps.

At ſeed-time, it is harrowed,—rolled,—ſowed,—and uſually gathered up into "narrow work," in the manner above deſcribed.

6. AFTER SUMMER-FALLOW.—The practice of ſummer-fallowing ſeldom occurs in this Diſtrict;—turneps or buck being generally introduced as a ſubſtitute for it. However, when land has been worn-down by cropping, and is much run to "beggary" and weeds, a "right-out ſummerly" is eſteemed by many judicious

husbandmen as good management; and is, it seems, since the late failure of the turnep-crops, gaining ground every year.

The close of a summer-fallow is the same as that of a backward-summerly: the manure is scaled in with the last plowing but one, the seed plowed in moderately deep, and the soil gathered into narrow ridges by the last plowing.

7. After turneps.—In general, the soil is plowed a mean depth, and the seed sown over the first plowing: if, however, the turneps be got off early, the weeds are sometimes first scaled in, and the seed plowed under with a second plowing, gathering the soil into narrow ridges.

General observation.—Excellent as the Norfolk practice of husbandry may be, taken all in all, it seems in this place necessary to observe, that although there are some superior husbandmen who put in their wheat-crops in a masterly style, a very considerable part of the land sown with wheat in Norfolk, is slovened over in a most unfarmer-like manner.

The second year's lays in general are broken up too late, and receive too inconsiderable a portion of tillage to bring them into a husband-like state.

Were

Were a Kentiſh, or any other good wheat, farmer, who had heard much of the ſuperiority of the Norfolk huſbandry, to ride thro' Eaſt-Norfolk in the month of November, he would experience ſome difficulty in conceiving himſelf travelling in a country of which fame has ſo long ſpoken loudly. It is true, he would not unfrequently be ſtruck with a beautiful object;—a kind of fluted frize-work, or any other ornament to the face of the country his fancy might picture to him; but he would not leſs frequently be diſguſted with the ſight of fields which he would little ſuſpect, on a curſory view, to be ſown with wheat. He would rather, at firſt ſight, take them for rough fallows, on which ſheep had been foddered with hay they could not eat; the whole ſurface being ſtrewed with tufts of roots and ſtems of withered graſſes, and with graſſy clods of every ſhape and dimenſion *.

* There are, nevertheleſs, men who argue in favor of this management; and, were it prudent to ſow wheat on very light "running ſands," it might be proper to preſerve part of the "wreck," as it is well termed, to prevent the ſand from being run together by heavy rains; but ſoils of this nature are, as has been already obſerved, generally improper for wheat.

In their culture of barley and of turneps, the Norfolk huſbandmen, no doubt, excel; but, taken collectively as a body of profeſſional men, they cannot, deſervedly, be ranked among wheat-farmers.

Nevertheleſs, there are, as I flatter myſelf fully appears by the foregoing detail, ſome huſbandmen in Norfolk who merit no part of this cenſure; their management being, perhaps, the beſt that art can deviſe for the ſoil they act upon: while, therefore, I condemn them as a body (for reaſons which I flatter myſelf are obvious), I mean to except, with all due reſpect, a number of individuals.

V. The manure-process.—Land which has been recently marled or clayed, requires no further addition;—nor has land which has received fifteen or twenty loads of dung and mould for turneps,—the firſt year's lay having been teathed in autumn, and the ſecond fed off,—any need of another dreſſing for wheat.

Where the ſoil is good, and the wheat apt to run too much to ſtraw, ſome few judicious farmers ſet their manure upon the young clover, thereby checking the effect of rankneſs to the wheat.

But

But the moſt general practice is to ſpread the manure upon the broken ground, in the manner deſcribed in the laſt ſection; or, if the ſeed be ſown upon the flag, to ſpread it on the turf and plow it under; or to ſpread it on the plowed ſurface, and harrow it in with the ſeed, as a top-dreſſing.

The laſt I have ſeen done in the following judicious manner. Three or four bouts are firſt plowed in the middle of each warp, forming a narrow bed of plowed ground, wide enough to ſet the manure upon, but not too wide to be received between the wheels of the cart; which, in ſetting on the muck, run in the plow-furrows on each ſide the bed. The manure is then ſet in hillocks upon theſe plowed ſlips; the warps are finiſhed-plowing; the manure ſpread over them;—the ſeed ſown;—and the whole harrowed in together.

By this management the manure goes on with eaſe to the team, and without the newly-plowed ground being cut to pieces by the wheels of the cart, or torn about by the feet of the horſes; for the cart being always, as it were, on the nail, the horſes have no obſtacles to ſtruggle againſt. In a wet ſeaſon this practice is ſingularly eligible.

The quantity of manure ſet on for wheat is generally leſs than that ſet on for turneps. Of *dung* eight to ten cart-loads (as much as three horſes can conveniently draw) an acre is reckoned a tolerable dreſſing. Of *lime*, three to four chaldrons an acre. Of *rape-cake*, a ton to three acres. Of *ſoot*, about forty buſhels an acre.

For obſervations on the *ſpecies* of manure for wheat, ſee the article MANURE-PROCESS.

VI. SEED-PROCESS.—In deſcribing this department of the culture of wheat, it will be neceſſary to perſpicuity, to conſider, ſeparately,

1. The time of ſowing;
2. The preparation of the ſeed;
3. The method of ſowing;
4. The quantity of ſeed;
5. The method of covering;
6. The adjuſtment of the ſoil.

1. THE TIME OF SOWING.—An orthodox farmer never thinks of beginning "wheat-ſeel" until after St. Faith's fair; which is held on the 17th of October. So prevalent, indeed,

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is this cuſtom, that, perhaps, nine of ten of the farmers in Eaſt-Norfolk begin to ſow wheat between the 17th and 24th of October;—and continue till the beginning of December;—ſometimes even until Chriſtmas. If they finiſh in November, they conſider themſelves in very good time. Wheat ſown in the ordinary broadcaſt manner is, however, here ſpoken of: for dibbling or ſetting of wheat, Michaelmas is eſteemed the beſt time.

The reaſon which the Norfolk huſbandmen give for ſowing their wheats ſo late, compared with the practice of other light-land counties, is, that their early-ſown wheats are liable to be winter-proud, and run too much to ſtraw; whereas their late-ſown crops afford leſs ſtraw, but a greater "caſt" more eſpecially, on land which has been recently marled.

This laſt idea, perhaps, accounts for the origin of their preſent time of ſowing. The preſent practice of huſbandry, in Norfolk, was eſtabliſhed a century, perhaps two or three centuries, ago; and has been handed down from father to ſon with but very little improvement or alteration. The preſent time of ſowing was, of courſe, fixed when the land was

full

full of marl, and was no doubt judiciouſly founded on experience. Marl, however, has now, in ſome meaſure, loſt its efficacy; and it ſeems probable, that not only the time of ſowing wheat, but the very ſyſtem of Norfolk huſbandry will require, ere long, to undergo a conſiderable change. Suffice it, however, in this place to ſay, that there are ſome ſenſible, judicious men, who already ſee the folly of waiting for St. Faith's fair, before they begin to ſow their wheat.

2. PREPARING THE SEED.—The ordinary method of preparation is to ſteep the ſeed in brine, and candy it with lime, in a way ſimilar to that practiſed in other counties; and, probably, with the ſame effect.

There are, however, men in this county who ſpeak with firmneſs and confidence of that they can prevent, by a preparation of the ſeed, the ſmut or "brand" of wheat. They, likewiſe, ſeem clearly of opinion, that all wheat would naturally become ſmutty, if not checked by a proper management of the ſeed; but that were it become, through neglect, as black as ſmut itſelf, they would engage in three years time to effect a radical cure. The firſt year, it

is

is allowed, there will many grains eſcape; the ſecond ſome; but the third year, there will not remain in the whole crop one "brandy" kernel.

This is ſpeaking cloſely to the point, and deſerves a hearing. The proceſs, though ſimple, is truly chemical; and the idea, I flatter myſelf, totally new to written agriculture.

Their method is this: Inſtead of diſſolving the ſalt in a large proportion of water, in order to form a brine to ſteep the wheat in; it is diſſolved in a very ſmall quantity of water;—barely enough to bring on the ſolution. With this *liquid ſalt* the lime is ſlaked; and with this ſaline preparation, in its *hotteſt* ſtate, the wheat is candied; having previouſly been moiſtened, for the purpoſe, with pure water.

I ſhall not, here, comment on this proceſs; but only obſerve, that the wheat-crops of the perſons who pride themſelves on this practice, are, in general, freer from ſmut, than thoſe of their neighbours.

3. THE MODE OF SOWING.—Broadcaſt is the prevaling practice. Dibbling, or ſetting, is in much uſe on the Suffolk ſide of the county.—Dibbling and fluting rollers are alſo uſed by ſome

ſome few individuals. But what is remarkable, drilling is, in a great meaſure, unknown in Norfolk; notwithſtanding the ſoil is ſo peculiarly adapted to that practice.

It appears under the ſoil-proceſs, that plowing in the ſeed under-furrow, is the favorite mode of ſowing wheat in Eaſt-Norfolk. It is done in this manner.

The land, having been harrowed down level, and the ſurface rendered ſmooth by the roller, the head-plowman (if at leiſure) "ſets out the warps;" that is, marks out the whole piece into narrow diviſions, or ſtripes, of about a ſtatute rod in width. This he does by hanging up his plow in ſuch a manner, that no part of it touches the ground except the heel, which ſlides upon the ſurface, and makes a guide-mark for the ſeedſman. If the plows are all employed, the ſeedſman will ſet out the warps himſelf, by drawing a piece of wood or other thing behind him, ſo as to make a mark to ſow by.

This method of ſetting out the ſeedſman's work, when he has no interfurrows to ſow by, is very accurate, and much preferable to the Kentiſh method of ſowing, by ſticks ſet up in

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the form of a lane; for, there, much depends upon the eye; whereas, by the Norfolk method, the ſeedſman ſees to an inch how far he has ſown, and where each handful ought to fall; he, of courſe, leaves no ſlips unſown, nor gives others double ſeed.

If the ſoil be intended to be gathered into ſix-furrow ridges, the ſeedſman ſows, on the warps, about two-thirds of his ſeed;—if into four-furrow work, ſomewhat leſs than two-thirds *.

The plowman then begins to ſet out his ridges, the ſame way that the warps are drawn; but without any regard either as to their ſtraightneſs, or their width; they being intended merely to direct the ſeedſman, not the plowman. In ſix-furrow work, the middle-bout plowman follows next, and after him the ſeedſman, ſtraining the remainder of his ſeed in the trenches made by the middle-bout plow; which is called "ſowing the furrows." The head-plowman follows laſt,—covers up the ſeed, and finiſhes the work. In four-furrow work, the two firſt furrows are ſown, and the ridgelets made up in a ſimilar way.

* See MIN. 67, on this operation.

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The uſe of ſowing the furrows is to give the outſides of the ridgelets their due proportion of ſeed; thereby preventing the inter-furrows from being left too wide and naked of plants. Some farmers ſow only one of the outſide furrows; namely, that toward the worked ground; and this is undoubtedly the more requiſite buſineſs; for the ſeed on this ſide having been all gathered up by the preceding furrow, the crumb or ſhovelling of the inter-furrow is left naked; and there would, of courſe, be no ſeed buried under it, if it were not thus ſown by hand, in the preceding plow-furrow.

In ſix-furrow work, three plows employ a ſeedſman, and finiſh about three acres a day. In four-furrow work, two plows find employment for a ſeedſman,—there being, in this caſe, more furrows to be ſown,—and finiſh about two acres.

The dibbling, "dabbing," or ſetting of wheat, is confined principally to the country about Wyndham, Attlebury, Buckenham, Harling, &c. In the other Diſtricts of Norfolk it is but little known, and no where *practiſed*; though ſometimes tried by way of experiment.

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The propriety of the practice depends upon circumſtances; ſuch as the price of labour, the price of the ſeed, and the quality of the ſoil. There ſeems, however, one thing always eſſentially needful; that is, a good ſoil. And this may, in ſome meaſure, account for the ſlow progreſs which it has made in the more northern parts of Eaſt-Norfolk; but why it ſhould not gain ground in the Blowfield, South-Walſham, and Flegg Hundreds, is a matter of ſurprize. Perhaps, nothing but the ſanction of cuſtom and faſhion is wanted to render it, in this well-ſoiled quarter of the county, the univerſal practice.

For a full account of this proceſs, ſee the MIN. 23. 26. 28.

The Dibbling-Roller is made ſomewhat ſimilar to the common ſpiky roller; with, however, theſe diſtinctions: it is in itſelf ſhorter, and the ſpikes, inſtead of ſtanding perpendicular to the circumference, are bent obliquely thereto, that they may leave ſmooth and clean indentures, without pulling up or breaking the flags. Between each row of ſpikes is a ſcraper to diſengage the roller from the mould, which is apt to ſtick between the ſpikes, and

which

which in moiſt weather renders it wholly uſeleſs. The ſeed is ſown broadcaſt over the indentures, and ſwept in with a buſh-harrow.

I have ſeen wheat come up very well after the ſpiky roller; but an implement which a ſhower of rain renders uſeleſs, ſeems ill-adapted to the buſineſs of ſowing wheat in November*.

4. QUANTITY OF SEED.—Three buſhels an acre, broadcaſt, is the favorite quantity of ſeed-wheat; without much regard being had to the time of ſowing.

This accounts in ſome meaſure for the want of ſucceſs in the early-ſown wheats. Three buſhels of ſeed ſown in September is equal to four or five buſhels ſown the latter end of November. It is no wonder, then, that the ſtraw ſhould prove ſlender, and the grain light: for the plants being too numerous, and the ſoil weak and ſhallow, though perhaps in ſufficient heart to puſh the plants through the winter and ſpring, the vigour of the ſoil is ſpent before harveſt, and the ears of courſe abridged of half their load. Whereas, had there been a due proportion of plants, the exhauſtion during winter and ſpring would have been leſs, and the ſtrength of the ſoil reſerved for the

* The fluting roller I did not meet with.

more

more material purpoſe of perfecting the plants at harveſt.

5. Covering the seed.—The ſeed ſown over the rough furrows of the firſt or ſecond plowing is covered in the uſual manner with tined harrows: generally with two ſmall harrows and two horſes led by a boy, and ſometimes guided with a plow-line; the man or boy following the harrows to lift them up, and diſengage them from the rubbiſh, which too frequently incumbers them.

That ſown after the hand-dibbles or the dibbling-roller is ſwept in with a buſh-harrow, made of a gate, hurdle, &c. wattled with thorns or other buſhes.

6. Adjusting the soil.—The ſubſoil of Norfolk being in general of an abſorbent nature, croſs-water-furrows are in many inſtances unneceſſary: however, where the ſubſoil is a brick-earth, which is not unfrequently the caſe, croſs-furrowing becomes abſolutely neceſſary to good management, though not always put in practice.

Some neat huſbandmen roll their "wheat-riggs" immediately after ſowing. A common roller takes two ridges at once, the horſes draw-

ing in the furrow between them. This gives an immediate neatneſs; renders the crop beautiful at firſt coming up; anticipates the labour of rolling in the ſpring; and thereby precludes the danger of unlocking the weed-ſeeds at that vegetative ſeaſon of the year.

VII. The VEGETATING-PROCESS. — *Hand-weeding* is the principal labour beſtowed upon the wheat-crop between ſeed-time and harveſt. If the interfurrows be wide and thin of plants, or if the crop be otherwiſe broken, *the hoe* is ſometimes, but very rarely, uſed.

Feeding wheat in the ſpring, though it cannot be called a common practice, is, nevertheleſs, frequently done; eſpecially when ſpring-feed is peculiarly ſcarce, as it was in the ſpring of 1782; when almoſt all the wheats in the country were fed off: not by ſheep, as is uſually the caſe, but by every other ſpecies of live ſtock. See MIN. 106.

If wheat abound with "red weed"—poppies—*ſwine* are frequently turned upon it to eat out this troubleſome weed; which they will do, with little or no damage to the wheat.

For

For the method of ſcaring *rooks*; and obſervations on *game*; ſee the general ſubject VEGETATING-PROCESS.

VIII. THE HARVEST-PROCESS.—1. THE TIME OF WHEAT-HARVEST, in Norfolk, is ſomewhat late. The ſeaſons are later, here, than they are in the more ſouthern provinces, and the Norfolk farmers, in general, ſuffer their wheats to ſtand until very ripe. In ſome of their ſmall "woodbound pightles," they are, indeed, under a degree of neceſſity of letting it ſtand until it can be cut and carried immediately; for ſhould it, in this ſituation, receive much wet in the ſhock, they would find it difficult to get it dry again, before it received conſiderable damage.

2. THE METHOD OF HARVESTING. WHEAT, as has been obſerved, is ſeldom cut by the acre; every farmer providing harveſtmen ſufficient to get in his crops.

It is, almoſt univerſally, "ſhorn" with ſickles; either with or without teeth, as beſt ſuits the hand or the fancy of the "ſhearer." Of narrow work, each man takes his rigg; a method which makes the work go on regular-

ly and with great conveniency to the workmen. Sometimes each man binds his own corn; but more frequently, two-and-two lay together; the firſt making the band, the latter binding the ſheaf. If they work ſingly, they drive the corn before them with their feet, until having collected a ſheaf, they ſtop and bind it up. This method is more expeditious than that of delivering the handfuls in detached reaps or ſhoves, which, in this narrow work, would be tedious to gather up; but, in appearance at leaſt, it is waſteful, and at the ſame time conveys, to a ſtranger, an idea of ſlovenlineſs. The bands are, in general, knotted; the ſheaves made of indeterminate ſizes; tied looſely, with the band about the middle; ſet up in ſhocks, as cloſe as they can ſtand, and with generally a ſheaf placed at each end, as if ſtudiouſly intending to exclude the air entirely from getting into the ſhock. No caps or head-ſheaves are ever made uſe of. If the crop be tall, the ſtubble is left eighteen inches or two feet high.

Unworkmanlike as all this would ſeem to a man of Kent, the Norfolk reapers have one qualification which, in ſome meaſure, atones for

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their ſins of undoubted ſlovenlineſs: a common hired harveſtman, who is not working for himſelf, but for his maſter, will clear with his own ſickle, one day with another, from two to three roods of wheat; in proportion to the ſtoutneſs of the crop.

If the ſheaves receive much rain in the ſhock, they are, the firſt fine day, ſet out ſingly, in order to have the benefit of the ſun and air; which, in the cloſe ſtate in which they are uſually huddled together, it is impoſſible for them to receive. This is by no means ſo tedious an operation as theory may ſuggeſt; but is, when the ſheaves are very wet, an eligible expedient.

3. An excellent regulation is common, in this Diſtrict, reſpecting GLEANERS; every pariſh, or pariſhes in general, reſerving their ſcattered corn for their own pariſhioners. This is not only equitable; but reſcues the farmers from thoſe clouds of gleaners, which, in ſome countries, ſtroll about from pariſh to pariſh. But, even with this regulation, the number of gleaners which are ſometimes ſeen collected together, is ſhameful; generally including a number of ſtrong healthy young women, who

would be much more laudably employed, as they are in other Diſtricts, in aſſiſting to reap the crop. Some farmers allow the gleaners to follow the ſhearers; but, in general, they are not permitted to enter the cloſe until the ſhocks are out of it.

4. LAYING UP THE WHEAT-CROP. Formerly the wheat-crop was put entirely into the ſpacious barns, with which this Diſtrict abounds; a wheat-rick being a phenomenon: of late years, however, pillar-frames have been conſtructed; and wheat-ricks are now no longer an uncommon ſight.

5. WHEAT-STUBBLES.—Notwithſtanding the length which ſtubble is generally left, it is ſeldom mown for ſtable litter: the general practice being to throw turneps upon it, in autumn, and, when the bullocks have trampled it down, to pull it into "rucks" with a pair of harrows, and carry it home as litter for the yards.

IX. THE BARN-MANAGEMENT.—After what has been ſaid already, on this ſubject, under the general head FARM-YARD-MANAGEMENT, little remains to be added here.

Wheat-

Wheat-ſtraw, being of leſs value, in Norfolk, than in moſt other places; owing to the great quantity of reed uſed in thatching; leſs care is obſerved in thraſhing wheat, here, than in places where it is either ſold for litter, as about London, or where it is in general uſe for thatch, as in moſt parts of the kingdom: even when it is intended for thatch, it is thraſhed rough, and ſhook off heads-and-tails; it being the univerſal practice of thatchers, here, to blend their ſtraw, and *draw* their thatch.

X. MARKET.—This, alſo, has been noticed in the general articles: ſuffice it, therefore, here to add, that Norfolk abounds with corn-mills;—the ſmall ſtreams which are very abundant in this country, are convenient reſources for water-mills: beſides which, numbers of windmills are diſperſed over the face of the country; ſome of them very capital and coſtly. One lately erected in this Diſtrict is ſaid to have coſt twelve hundred pounds.

For obſervations on the effect of *berbery* on wheat, ſee MIN. 13.

For an inſtance of *mowing* wheat, ſee MIN. 14.

For an experiment with different *manures* for wheat, ſee MIN. 18.

For an experiment on the mode of *ſowing*, ſee MIN. 19.

For the origin and method of *ſetting* wheat, ſee MIN. 23.

For further obſervations on *ſetting*, ſee MIN. 26 and 28.

For the method of *plowing* for wheat againſt *pheaſants*, ſee MIN. 41.

For an inſtance of *ſowing* wheat *between-furrow*, ſee MIN. 43.

For an exception to the common method of *ſowing* wheat in four-furrow work, ſee MIN. 67.

For obſervations on the practice of *feeding* wheat, ſee MIN. 106.

For an experiment made by planting *berbery* among wheat, ſee MIN. 133.

28.

BARLEY.

THIS SUBJECT likewiſe requires to be divided into the following articles:

1. Species,
2. Soil,
3. Succeſſion,
4. Soil-proceſs,
5. Manure-proceſs,
6. Seed-proceſs,
7. Vegetating proceſs,
8. Harveſt-proceſs,
9. Barn-management,
10. Market.

I. SPECIES.—The common long-eared barley (*hordeum vulgare*) is the prevailing and almoſt only ſpecies of barley ſown in this Diſtrict.

II. SOIL.—The Norfolk ſoil is peculiarly well adapted to this crop: even the lighteſt of it, if it be in ſufficient heart, will bear tolerable barley; and the ſtrongeſt is not too heavy for this grain; which is no where produced in greater perfection than in Norfolk; whoſe barley

barley is coveted for ſeed throughout the kingdom.

III. Succession.—In the grand routine, barley ſucceeds *wheat* and *turneps*; and in ſome very light land farms, it is ſown inſtead of wheat, after the *ſecond year's lay*.

IV. Soil-process. — 1. After wheat;—the ſtubble having been trampled down with bullocks at turneps, and wheat-ſeel being finiſhed, the farmer begins to "ſcale in his wheat ſtubbles" for a winter fallow for barley. If the land lie in narrow work, the ridgelets are ſplit; if in warps, the ground is likewiſe plowed clean, but very fleet. The beginning of March, the land is harrowed, and preſently after the farmer "takes up his wheat-ſtubbles" by a full-pitch croſs-plowing; or, if the ſeaſon be wet and the ſoil heavy, he reverſes the ridges. In April he harrows, and begins "ſtirring for barley," with another full-pitch plowing, lengthway; generally gathering the ſoil by this plowing either into five-pace, or into ten-pace warps; in which it lies until ſeed-time;—when it is harrowed; rolled;

ſown;

ſown; plowed fleet; reverſing the warps, and "ſlading down" the furrows,—ſo as to render the entire ſurface as even and level as may be.

2. AFTER TURNEPS,—the ſoil is generally broken up as faſt as the turneps are got off; if early in winter, by rice-balking; if late, by a plain plowing. The general practice, if time will permit, is to plow three times; the firſt fleet the ſecond full-pitch; the laſt a mean depth; with which laſt the ſeed is plowed in.

But when it is late before the turneps are got off, different ways of management are followed, according to the ſtate of the ſoil, and the ſeaſon, and the judgement of the farmer.—Sometimes the ground is only plowed once, and the ſeed ſown above; but more frequently it is broken by three plowings, as above; notwithſtanding, perhaps, the farmer has not more than a week to perform them in.

This at firſt ſight appears injudicious management: the plowings being ſo quick upon each other, neither the root-weeds have time to wither, nor the weed-ſeeds to vegetate; yet a principal part of the moiſture of the ſoil (a thing peculiarly valuable in Norfolk at that

time

time of the year) is neceſſarily exhauſted. But this being a frequent practice of ſome of the beſt farmers in the Diſtrict, we may reſt aſſured that two plowings and harrowings are not wantonly thrown away. The Norfolk farmers in general are maſters in the art of cultivating barley. They ſeem fully aware of the tenderneſs of this plant in its infant ſtate, and of its rootlings being unable to make the proper progreſs in a compact or a cold ſoil: they therefore ſtrive by every means in their power to render the ſoil open and pulverous. To this intent it is ſometimes two-furrowed, and ſometimes a fourth earth is given; eſpecially in a cold wet ſeaſon.

The backward ſpring of 1782 tried their ſkill: ſome lands were two-furrowed twice-over, laying the ſoil up in ridgelets, dry and hollow; ſo that two or three fine days fitted it for the reception of the ſeed; breaking under the ſeed-plowing as fine as aſhes.

Nor is this caution confined to "turnep-barley," but is extended more or leſs to "ſtubble-barley;" which, however, does not require ſo great a degree of care; the ſoil in this caſe being kept open, in ſome meaſure, by the undigeſted ſtubble,

ſtubble, and the roots of graſſes and other weeds, which a turnep-fallow is, or ought to be, free from.

This, perhaps, accounts fully for the ſuperiority of ſtubble-barlies, over thoſe produced by a well-tilled well-manured turnep-fallow: a myſterious fact which cannot, perhaps, be explained on other principle.

3. AFTER LAY,—the turf is generally broken by a winter-fallow, and the ſoil treated in other reſpect, as after wheat. (For an exception ſee MIN. 57.)

V. MANURE-PROCESS.—Barley is ſeldom manured for; except when ſown after lay; when it is treated as wheat. After turneps, no manure can be requiſite; nor after wheat, if this has been manured for: if not, the turnep-crop following immediately, the barley is left to take its chance; unleſs the opportunity be embraced for winter-marling.

VI. SEED-PROCESS.—1. TIME OF SOWING.—Notwithſtanding the dryneſs of the Norfolk ſoil, barley may be ſaid to be ſown late, in this Diſtrict. There is little ſown before the middle of April, and the ſeed-time ſeldom cloſes until

until towards the middle of May. The time of ſowing, however, depends in ſome meaſure on the ſeaſon; which, with reſpect to ſowing barley, is more attended to in Norfolk than perhaps in all the world beſide. Until Linnæus hit upon the idea of ſowing by the foliation of trees, the republic of agriculture never heard of any other guide to the time of ſowing than the almanack; which is ſtill followed implicitly in every Diſtrict in this kingdom except Norfolk: where a maxim, probably as old as the preſent ſyſtem of huſbandry, ſhews that her huſbandmen are not inattentive to the foliation of trees with reſpect to the proper ſeaſon of ſowing; their maxim importing, that the ſowing of barley ought to cloſe with the foliation of the oak:—

"When the oak puts on his goſſling grey,
"'Tis time to ſow barley night and day;"

that is, when the oak puts on that ſallow appearance which it does at the time the buds are breaking, a few days previous to the expanſion of the leaves, no time ſhould be loſt in getting the ſeed-barley into the ground; that

that being the happy juncture which ought to be embraced.

In the backward ſpring of 1782, barley was ſown in June, with confidence, and with ſucceſs: I have by me a ſample of exceedingly good barley, produced from ſeed ſown, by an experienced huſbandman, the fourth and fifth of June. See note to MIN. 125, for remarks on this incident.

2. PREPARING THE SEED.—I never met with an inſtance either of fortifying it againſt diſeaſe, or of ſteeping it to forward its vegetation in a dry ſeaſon, or a backward ſeed-time. This is ſtrong evidence, though not a proof, that ſteeping ſeed-barley with intent to promote its vegetation, has no beneficial effect.

3. THE METHOD OF SOWING.—All ſown broadcaſt; and almoſt all *under-furrow!* that is, the ſurface having been ſmoothed by the harrow and roller, the ſeed is ſown and plowed under with a ſhallow furrow: a circumſtance this, which, until I obſerved it in Norfolk, had never occurred to me, either in practice or theory; though admirably adapted to a light dry ſoil; and, indeed, to any ſoil which is light enough to produce good barley;

pro-

provided it be rendered ſufficiently fine, and the ſeed be not buried too deep.

Whether through general cuſtom, or from particular experience, the Norfolk farmers are very partial to this method of putting in their barley: however, if the ſeaſon be wet, and the ſoil cold and heavy, good farmers not unfrequently ſow barley above. And, in all probability, the diſtinction is well founded. In a dry ſpring and ſummer, ſowing under muſt, to all human reaſoning, be eligible; and in a cold ſpring, or when the ſoil is rough with clods, ſowing above may be equally good management. Nevertheleſs, I have known a judicious farmer give, under thoſe circumſtances, an earth extraordinary, rather than not have an opportunity of plowing in his ſeed.

In a forward ſpring, and when the laſt piece of turneps happens to be eaten off late, the ground is ſometimes, at a pinch, obliged to be plowed only once, and to be ſown above; but, even in this caſe, there are men who are not at a loſs for an expedient. Inſtead of turning over the whole thickneſs of the ſoil at once, they "two-furrow" it, and ſow *between*; in the manner deſcribed in MIN. 43.

This

This method, if the under plit be ſufficiently moiſt and mellow to break kindly with the harrow, appears to be moſt eligible management.

4. THE QUANTITY OF SEED.—Three buſhels an acre may be taken as the neareſt medium quantity of ſeed-barley.

5, 6. COVERING,—ADJUSTING.—Whether or not graſs-ſeeds be ſown over the barley, the ſurface is harrowed, preſently after the laſt plowing; and, when the barley is up, run over with a light roller.

VII. VEGETATING-PROCESS.—Handweeded.

VIII. HARVEST-PROCESS.—1. TIME OF CUTTING. Barley, like wheat, is generally ſuffered to ſtand until it be *very ripe*.

2. METHOD OF CUTTING.—It is univerſally *mown into ſwath*;—with a ſmall bow fixed at the heel of the ſithe.—Cradles are not in uſe; and the north-country method of ſetting it up in ſinglets, is unknown.

3. METHOD OF DRYING.—If barley receive wet in the ſwath, it is treated in a ſingular method in Norfolk. It is not turned, but

"*lifted*:"—that is, the heads or ears are raiſed from the ground, either with a fork or the teeth of a rake; thereby admitting the air underneath the ſwaths; which, though they be ſuffered to fall again immediately, do not fall ſo cloſe to the ground as they lay before they were lifted; the air having free admiſſion under them. This method of lifting is thought to ſtop the ears from vegetating nearly equal to that of turning; which requires more labour; beſides breaking and ruffling the ſwaths; which, by repeated turnings, loſe their ſtiffneſs, becoming weak and flabby, and liable to fall into cloſe contact with the ground; in which ſtate the corn preſently begins to ſprout. When the ſwaths are become thoroughly dry, and ſtiff on the upper ſide, they are then *turned*, that the other ſide may be got into the ſame ſtate; and, if the weather be ſuitable, rendered fit for

4. Cocking.—This is never done until a fair proſpect of carrying offers itſelf; it being eſteemed in Norfolk, as it is in the ſouthern counties, negligent management to leave barley all night in cock. The method of cocking, or, as it is provincially, and more properly,

perly, called—"gathering,"—is, in Norfolk, performed in a particular manner. Some ſmall part may be gathered by men, with "gathering-forks," — common *corn-forks*; — but the principal part of the barley-crop is gathered by women, with "gathering-rakes;"—namely, ſtrong rakes, with long teeth—with which the ſwaths are rolled up into wads of about a a pitch, or fork-full, each, the women at the ſame time raking the ſwath-ſteads. This rids work, ſaves men, and puts the barley into a convenient form for pitching; a roll hanging better together upon the fork, than a cock made up in layers in the Kentiſh manner.

5. CARRYING.—Generally two pitchers and two loaders; who load with the hands only: women rake after the carriage: men, at leiſure-times, rake the ſtubble with drag-rakes: trot with empty carriages;—tread mows, and ſometimes ricks, with horſes: frequently make a "well,"—that is, carry up a flue or chimney, in the middle of a barley-rick; and ſometimes, when the ſeaſon is catching, uſe the ſame judicious precaution in a "gulph," or mow, in a barn.

IX. BARN-MANAGEMENT.—See the general head.

X. MARKET.—Beſides what is ſhipped off to the London and other markets, a conſiderable quantity is malted in the country; both for a market and for home-conſumption: this, however, is ſmall, compared with that of other countries of equal extent and populouſneſs: ſmuggled ſpirits leſſen the quantity; —and the quality of malt-liquor, in Norfolk, is lower than in many parts of the kingdom; the "harveſt beer" excepted; which is uſually brewed in October, and kept round till the enſuing harveſt.

For an inſtance of ſheep-fold being of great uſe to barley, ſee MIN. 11.

For an experiment with lime for barley, ſee MIN. 29.

For a ſingular ſoil-proceſs for barley, ſee MIN. 57.

29.

OATS.

THE QUANTITY of oats grown in *this* Diſtrict is inconſiderable, when compared with that of barley.

The only SPECIES I have obſerved is a white oat, of a quick growth, and probably of Dutch extraction.

They are grown occaſionally on all SOILS; but moſt frequently on cold heavy land, or on very light unproductive heathy ſoils.

Oats moſt frequently SUCCEED wheat or olland-barley; but there are no eſtabliſhed rules reſpecting any part of the culture of this time-ſerving crop.

The SOIL-PROCESS is uſually the ſame as that for barley: the ground being, generally, broken by a winter fallow of three or four plowings; oats, however, are ſometimes ſown on one plowing.

The SEED-PROCESS, too, is frequently the ſame: except that oats are more commonly ſown above-furrow than barley is. The *time*

of ſowing oats is generally made ſubſervient to that of ſowing barley; ſome being ſown before; others after barley-ſeed: an uncommon circumſtance. I have ſeen oats ſown in June; and it is remarked by men of obſervation, that oats ſown late, grow ripe earlier than barley ſown at the ſame time. This ſhews that the Norfolk-oats are of a quick-ripening kind. The *quantity of ſeed* from four to five buſhels an acre.

I met with one remarkable inſtance reſpecting the culture of oats. The ſurface of a piece of ground, which had been ſown ſeveral days with oats, but which were not yet up, was "run," by heavy rains, into a batter; and baked by ſucceeding dry days to a cruſt; ſo that the owner deſpaired of a crop: he therefore, as an expedient, plowed the ground; turning the oats, notwithſtanding they had begun to vegetate, under a fleet furrow. The ſucceſs was beyond expectation.

This operation, however, was not altogether a game of hazard: there being, it ſeems, a farmer, ſomewhere in the Diſtrict, who uſes it in common practice; plowing in his oats with a very fleet furrow; and, after they have

"chicked,"

"chicked," but before they appear above-ground, turns over the ſoil a full pitch: and he is ſaid to find his account in this ſingular management.

Two things are, undoubtedly, obtained by this practice: weeds of every ſort are either totally deſtroyed, or ſufficiently checked to give the corn an opportunity of gaining full poſſeſſion of the ſoil; which, by this operation, if performed in proper ſeaſon, acquires a degree of poroſity, giving a degree of freedom to the rootlings of the young plants, which, perhaps, no other proceſs could give.

The openneſs and freedom communicated by this operation, ſeems to be ſingularly well adapted to the infant plants of BARLEY; which, it is highly probable, might frequently receive benefit from this extraordinary operation.

The HARVEST-PROCESS,—BARN-MANAGEMENT, &c. of oats, are ſimilar to thoſe of BARLEY.

30.

PEAS.

PEAS cannot be called a ſtaple crop of this country: nevertheleſs they are every year grown, in greater or ſmaller quantities; according, perhaps, to the demand of the preceding year, and according to the comparative prices of peas and barley; which, in Norfolk, may be called rival crops; peas being uſually ſown on wheat-ſtubbles, or on light-land lays, which, in the common courſe of culture, are objects of the barley-crop.

The very low price of barley in the winter 1781-2 ſickened the farmers of that crop; and, in the ſpring of 1782, more peas were ſown in Eaſt-Norfolk, than, perhaps, had ever been known in any preceding year. This circumſtance afforded me a favourable opportunity of making remarks on the different modes of cultivation made uſe of in producing this crop; which, as will appear by the following ſketches, has not, here, any ſettled mode of culture appropriated

to

to it. Yet no crop, perhaps, affords greater proofs of the ingenuity of the Norfolk husbandmen, and of their talent for expedients, than that which is now before us.

B——m *dibbled* * seven pecks of white peas an acre, on *olland*, once-plowed, in flags, "as "wide as he could whelm them." Two rows of holes on each flag; the holes about three inches apart in the rows; namely, "four holes in the "length of the foot," one pea in each hole. Gave 4s. 6d. an acre for "dabbing;" and hired "droppers" by the day (children belonging to the parish); which cost him about 4s. an acre more. The men offered to dibble and drop for 9s.—The soil free from stones. Finished 27 Feb.

H———d *sowed* four bushels an acre of white peas, broad-cast; on *barley-stubble*, after turneps—the clover missing. Soil light and shallow. Finished 1 March.

M——s *dibbled* two bushels of white peas an acre on *wheat-stubble*. Gave 8s. an acre for dabbing and dropping. Finished the beginning of March.

* Dibbling: for particulars respecting this operation, see MIX. 23.

S———n *ſowed* four buſhels, broad-caſt, on *olland*;—part once-plowed; part rice-balked, and afterwards plowed a mean pitch; the whole ſown above-furrow, and rolled before ſowing.

G——n *dibbled* two buſhels on *olland*; the price four ſhillings a buſhel for dabbing and dropping: about three holes and a half in a foot: one pea in each hole. Flags narrow.

D——l *dibbles* nine pecks on *any thing* which is in heart. Gives any price to have them done well, and put in thick. His dibbled peas, laſt year, produced ten coomb an acre: dibbles about twenty acres this year: almoſt done; 21 March.

F——r has *ſown* upwards of twenty acres this year on *wheat-ſtubble*, inſtead of barley: ſows four buſhels of white an acre. Plows three or four times, and plows in the ſeed under-furrow. Finiſhed 2 April.

B——r *ſowed* four buſhels of white an acre, broad-caſt, on a *wheat-ſtubble* winter-fallowed: namely, ſcaled in—two-furrowed acroſs—ſtirred—harrowed—ſowed—and *plowed under*, about three inches deep; the outſide furrows ſown, and ſladed down, and the whole harrowed acroſs once in a place the beginning of April.

B—d

B—d *ſows* three buſhels of grey peas, broad-caſt, the beginning of April. He thinks three buſhels of grey are equal to four of white.

B——d, on light thin-ſkinned *olland*, dibbled part with two buſhels an acre; and *two-furrowed* the reſt with three buſhels, *ſown* by hand *between the furrows*; each of them about one inch and a half thick! The Norfolk plow ſingularly adapted to this work; and, in looſe broken ground, the proceſs would be excellent; but, in whole ground, the back of the firſt furrow being ſmooth, and the peas round and ſlippery, they do not reſt where they fall, but roll more or leſs into the ſeams and hollows, notwithſtanding the operation was, in this inſtance, performed in a maſterly ſtyle.

Thus it appears that various ways are practiſed in putting in the pea-crop; but, from thoſe and other inſtances, I may venture to draw two general inferences. LAYS are ſeldom plowed more than once for peas; and the ſeed is, in general, DIBBLED IN, upon the flag of this one plowing. But STUBBLES are, in general, broken by a winter-fallow of three or four plowings; the ſeed being SOWN BROAD-CAST; and PLOWED IN, about three inches deep, with the laſt plowing.

VETCHES.

31.

VETCHES.

WHEN we conſider the nature of the Norfolk ſoil, and the excellency of the Norfolk huſbandry, we are, at the firſt ſight, ſurpriſed that vetches are not more in uſe, as ſummer-food for farm-horſes;—and nothing, perhaps, but the eſtabliſhed prevalence of clover can account for it. Clover is not only mown for ſoiling horſes in the ſtable; but, as has been already noticed, horſes are frequently "roped" or teddered on clover; as well as turned upon it looſe.

This practice was, probably, eſtabliſhed when clover was new to the ſoil, and the crops of courſe large and luxuriant; and it was then no doubt the moſt eligible management: nevertheleſs, it may, now, when the ſoil is no longer the favorite of clover, be worth the attention of farmers, of the preſent day, to try whether more vetches, and proportionably leſs clover, would not be the moſt eligible management.

32.

BUCK.

BUCK is an object of the Norfolk culture, in a two-fold light. It is propagated as GRAIN, and as MANURE; and it will be proper to view it in these two lights. However, the main intention of its propagation, whether as a crop, or as a melioration of the soil, being the same; namely, the cleansing of foul land; it will be convenient to keep the two objects in nearly the same point of view.

I. With respect to SPECIES, there is only one; this grain having not yet, I believe, run into any *varieties* sufficiently striking to have distinguishing names appropriated to them.

II. It is sown almost indiscriminately on all species of SOILS; except that light poor land has the preference: indeed, it is to this species of soil that buck seems most especially adapted.

III. It

III. It likewiſe SUCCEEDS every ſpecies of crop; the ſtate of the ſoil, as to foulneſs and poverty, being generally more attended to than either the nature of the ſoil or the crop it bore laſt.

IV. THE SOIL-PROCESS depends upon the ſtate of the ſoil, and the intention, jointly: if the ſoil be tolerably clean, and the buck be intended to be plowed under as a manure, it is ſown on one plowing: but, in general, the ground is broken, as for barley, or peas, to forward the fallow, and ſecure a crop.

V. THE SEED-PROCESS is the ſame for both intentions; excepting that, for a crop, the ſeed is ſown firſt; namely, immediately after barley-ſeel: and that intended to be plowed under, is ſown as ſoon afterwards as the ground is in a ſtate fit to receive the ſeed. It is univerſally ſown above-furrow. The quantity of ſeed ſix pecks to two buſhels an acre.

VI. NO VEGETATING-PROCESS takes place: the growth of buck is ſo rapid as to outſtrip and ſmother almoſt every ſpecies of weeds; an excellency peculiar to this crop.

VII. This

VII. The method of PLOWING BUCK UNDER, and the after-management of buck-fallows, have been deſcribed under the article WHEAT.

VIII. For the HARVEST-PROCESS of buck, we refer to the head BARLEY; the harveſt-management of both crops being ſimilar.

IX. The FARM-YARD MANAGEMENT of harveſted buck is alſo ſimilar to that of barley; except that the ſtraw being fit for litter, only, and the grain being wanted for the fatting of pigs, in autumn, and the beginning of winter, it is frequently thraſhed out preſently after harveſt, before the live-ſtock are taken into the yards.

X. MARKETS. Notwithſtanding it is highly probable that there is more buck grown annually in Norfolk, than in the other thirty-nine counties of the kingdom, it is all conſumed in the neighbourhood of its growth. It is the univerſal food of ſwine and poultry; both of which it fats quick and well. It is ſometimes cruſhed for pigs, and ſometimes given to them whole: in this caſe, however, ſome judicious

judicious husbandmen mix a few oats or peas with it, in order that the swine may grind it down the more effectually, and thereby prevent its passing through them whole.

33.

TURNEPS.

THE TURNEP-CROP is the grand basis of the present system of Norfolk husbandry. I shall, therefore, endeavour to describe its culture as amply as comprehensiveness will permit. In doing this it will be necessary to consider,

1. The species,
2. The soil,
3. The succession,
4. The soil-process,
5. Manure-process,
6. Seed-process,
7. Vegetating-process,
8. Application.

I. SPECIES.—There are four different species, or, perhaps, *varieties* of one species, sown in Norfolk.

1. THE

1. "THE COMMON WHITE STOCK,"—white-loaf—white-round—white-rind—or, as it is called in many places, THE NORFOLK TURNEP.

2. "THE PURPLE STOCK." This, in its ſhape and the manner of its growth, is ſimilar to the common turnep; but its rind is of a dark red or purple colour, its ſize, in general, ſmaller, and its texture cloſer and firmer than that of the common white ſtock; and it is allowed to ſtand the winter better, and to preſerve its firmneſs and ſucculence later in the ſpring, than the common turnep. But it ſeems to be a fact well-eſtabliſhed, that the purple turnep is not ſo well affected by cattle as the other ſpecies: this circumſtance, added to the ſmallneſs of its ſize, confines its culture within narrow limits.

3. "THE GREEN STOCK." This reſembles, ſtill more, the common white turnep; from which it differs principally in the colour of its rind. It is in the hands of very few: theſe few, however, *ſay* that it is preferable to the common ſtock.

4. "THE PUDDING STOCK *." This, in its ſhape, is ſo perfectly different from the

* The *tankard-turnep* of the midland counties.

common ſort, that it might well be ranked as a diſtinct *ſpecies*. Inſtead of ſpreading itſelf flat upon the ground, or burying itſelf partially in the ſurface-mould, it riſes in a cylindrical form, eight, ten, or twelve inches high; ſtanding in a manner wholly above-ground; generally taking a rough irregular outline, and a ſomewhat reclining poſture. In colour, contexture, and quality, it reſembles very much the common turnep; of which it is by much the moſt formidable rival. Indeed, for early ſowing, to be eaten off in autumn, this long-rooted ſpecies ſeems to gain a preference even to the common white-rounds: the roots are of quick growth,—acquire a great ſize,—and, ſtanding wholly above-ground, are readily drawn; or, if eaten off by ſheep, are conſumed with little waſte; the refuſe ſhells being ſmaller than thoſe of broad flat turneps half-buried in the ground.

But this very circumſtance renders them wholly unfit to be ſown as a ſpring-food; for, ſtanding, as they do, expoſed on the ſurface, they become liable to the attack of every froſt; and, from annual experience, it is known that they ſuffer ſooner, and more, from the

the ſeverities of winter than THE COMMON WHITE-ROUND STOCK; which, taken all in all, is, I believe, the beſt ſpecies of turnep known, at preſent, in theſe kingdoms.

II. SOIL. Turneps are ſown on every ſpecies of ſoil in uſe as arable land. It is obſervable, however, that the ſtronger, heavier ſoils, of the ſouthern parts of this Diſtrict, will not bring turneps freely without marl; which, perhaps, by rendering the ſoil more friable, and conſequently *lighter*, fits it for the tender fibrils of the turnep-plant in its infant-ſtate; or, perhaps, the marl itſelf is acceptable to this *luxurious* plant.

Be this as it may, marl is found highly beneficial to the crop; and the fact proves, that a ſoil by nature ungenial to turneps, may in ſome caſes be rendered agreeable to them, by art. See MIN. 136.

III. SUCCESSION. In the regular courſe of management, turneps ſucceed barley after wheat; and in *this* part of the Diſtrict, where the hexennial round is obſerved with conſiderable regularity, they ſeldom ſucceed any other

crop; excepting ſome few ſown on wheat or pea-ſtubble after harveſt; but this is not a general practice.

IV. SOIL-PROCESS.—1. The farmer having finiſhed ſcaling in his wheat-ſtubbles for barley, he begins about Chriſtmas, to BREAK UP HIS BARLEY-STUBBLES for turneps.

In this inſtance, he quits his general rule of beginning to break up a fallow with a fleet plowing; for, in breaking up a turnep-fallow, he goes the full depth of the ſoil—"turning it "up a full pitch to take the winter."—His motive in this, as in moſt other caſes, is a good one. In this inſtance, indeed, his practice obviouſly proceeds from a degree of neceſſity; his general plan of management not allowing him time to plow his turnep-fallows more than once, during the winter-ſeaſon. For, no ſooner has he given them this one plowing, than his wheat-ſtubbles require to be taken up for barley; which, with his other ſpring-crops, engage every hour of his time, until the cloſe of ſpring ſeed-time.

2. This finiſhed, he begins TO TAKE UP HIS TURNEP-FALLOWS. In doing this, too, he deviates from

from general practice; for the ſecond plowing of a turnep-fallow is not acroſs but length-way. But here, likewiſe, he acts from a degree of neceſſity; for the firſt plowing having been given the full depth of the ſoil, there is no whole ground left for the plow to lay hold of in croſs-plowing; and the flags, of courſe foul, having lain ſome months unmoved, are become too tough to be cut readily with the coulter; but would, of courſe, drive into rucks before the plow.

3. This looſe woolly ſtate of the turnep-fallows is, however, ſometimes leſſened by harrowing them in the beginning of April; and, while the lays are ſhut up, THROWING TURNEPS upon them for bullocks; the treading of which gives the ſoil a degree of firmneſs, and renders the ſecond plowing more tolerable.

4. The teams, from the middle of May to the beginning of July, are almoſt wholly employed in plowing, harrowing, and manuring the turnep-grounds: for the ſecond plowing finiſhed, and the ſurface ſmoothed with the harrow, a THIRD PLOWING is given.

5. This plowing, being well reduced with the harrow, and the root-weeds collected, and

burned or carried off, the DUNG is ſet on, and, if time will permit, ſcaled in fleet by a FOURTH PLOWING.

6. After which, the ſoil and manure are intimately blended with the harrow; and, in due ſeaſon, the SEED-PLOWING takes place.

The fourth plowing is, however, frequently omitted; either through want of time or other reaſon; the manure being in this caſe turned in immediately with the ſeed-plowing, which, in either caſe, is of a mean depth. The former is, no doubt, to appearance, the moſt huſband-like practice, and, in a light ſoil and moiſt ſeaſon, may be the moſt eligible management;—but, in a dry time, and on a ſtout cloſe-textured ſoil, the latter, provided the manure be finely broken, and evenly ſpread, may be more eligible. See MIN. 71. on this ſubject.

V. MANURE-PROCESS.—1. The SPECIES of manure which is principally depended upon for turneps is "*muck*;"—that is, dung, with a greater or ſmaller admixture of mould, marl, &c.—*Malt-coombs* are in good repute; and *oil-cake* is ſometimes uſed by ſome few individuals;

dividuals; but it may be ſaid, that nine acres of ten of the turneps grown in Eaſt-Norfolk are manured for with "muck." The quantity of malt-coombs made in the county is inconſiderable, when compared with the number of acres of turneps annually ſown in it; —and rape-cake is principally confined to the north coaſt: nor are either of theſe manures equal to the taſk of keeping up the ſoil thro' the barley and the two graſs crops; much leſs of aſſiſting to ſupport it under the ſucceeding crop of wheat, in the manner which may reaſonably be expected from a proper dreſſing of dung; the whole quantity of which, made upon a given farm, ought, in my opinion, to be applied ſolely to the turnep-crop: and, if the ſoil require ſupport under the wheat, let it be aſſiſted with lime, malt-duſt, ſoot, oil-cake, or other light manures; which may not be only adequate to ſecuring a crop of wheat, but may be more or leſs ſerviceable to the ſucceeding crop of barley. This has already been mentioned; but I think it merits a repetition in this place.

2. The QUANTITY of dung ſet on for a crop of turneps, generally depends on the

quantity on hand, and the quantity of turnep-ground to be manured: there is little danger of ſetting on too large a quantity: ten to fifteen cart-loads of good *muck* are conſidered as a fair dreſſing. Of *oil-cake*, about a ton to three acres: of *malt-coombs*, fifty or ſixty;—and of *ſoot*, forty or fifty buſhels an acre.

For the method of carrying out, compoſting, and ſetting on muck, ſee the article MANURE-PROCESS.

VI. THE SEED-PROCESS.—1. THE TIME OF SOWING depends upon the application.—When they are intended for early conſumption, they are ſown as ſoon as the ſoil can be got into proper order for them: but if they be intended to ſtand the winter, the beginning of July is thought to be early enough. The moſt general rule is, to begin to ſow about a week before Midſummer, and continue ſowing, from time to time, until about a fortnight after Midſummer;—ſay, from the ſeventeenth or eighteenth of June, to the ſeventh or eighth of July.

It is a fact well aſcertained, that late-ſown turneps ſtand the winter better than ſuch as are ſown early; which are ſubject to the blight; liable to be rotted by much wet, as well as by froſt; and become tough and woolly in the ſpring, when the later-ſown ones are in full perfection.

If a Norfolk farmer could inſure his firſt ſowing, he would ſow later than he now does; but liable as the turnep-crop is to numerous accidents and miſcarriages, it is prudent to have a week or two in reſerve for a ſecond ſowing, in caſe the firſt ſowing ſhould fail.

2. Old ſeed is ſometimes PREPARED by ſteeping it in water, in order to forward its vegetation; but this is by no means a general practice. Experiments have been tried on coating the ſeed with ſulphur, ſoot, &c. as a ſecurity againſt the "fly;" but the reſults have not been ſuch as to eſtabliſh any practice of this nature; the ſeed, whether old or new, being uſually ſown dry, and unprepared.

3. THE METHOD OF SOWING is univerſally broad-caſt. The ſeed-plowing having been gone over, once in a place, with the harrow, the ſeed is ſown with a wide high caſt, the

ſeedſman

ſeedſman going twice over the ground; agreeably to the prevailing, though not the general, method of ſowing.

4. THE QUANTITY OF SEED, two pints an acre.

5. The ſeed is COVERED by two tines of a pair of light harrows, uſually drawn "backward;" that is, wrong-end-foremoſt, to prevent the tines, which are generally ſet ſomewhat pointing forward, from tearing up the clods, and burying the ſeed too deep. The horſes are univerſally walked one way, and trotted back again in the ſame place. This is an excellent cuſtom; the quick zigzag motion of the harrows at once aſſiſting to level the ſurface, and to diſtribute the ſeeds more evenly.

VII. THE VEGETATING-PROCESS. Turneps are univerſally hoed: and, unleſs they be ſown very late, are generally hoed twice.

1. The diſtance of TIME between the ſowing and the FIRST HOEING is very uncertain; depending on the ſoil and the ſeaſon: the ſize of the plants is the only guide.

If turneps be ſuffered to grow too large before they be hoed, the plants are difficult

to be ſet out ſingly, and are liable to be drawn up by weeds; thereby acquiring a ſlender upright tendency; whereas their natural growth, in their infant-ſtate, is procumbent, ſpreading their firſt leaves on the ground, and taking the form of a roſe.

If the hoe be put in too ſoon, the plants which are ſet out are liable to be buried, and their tender rootlings diſturbed, in the act of ſetting out the neighbouring plants.

The critical ſtate obſerved by judicious huſbandmen, is, when the plants, as they lie ſpread upon the ground, are about the ſize of the palm of the hand: if, however, ſeed-weeds be numerous and luxuriant, they ought to be checked before the turnep-plants arrive at that ſize; leſt, by being drawn up tall and ſlender, they ſhould acquire a weak ſickly habit.

2. THE METHOD OF HOEING turneps is difficult to deſcribe: nothing but practice can teach it:—and, like other manual arts, it ought to be learnt in youth.

A boy in Norfolk, by the time he is the height of a hoe, begins to make uſe of one: conſequently, every man who has been bred to country-

country-buſineſs is a turnep-hoer; yet not always, even with this advantage, an expert one.

The operation, to be performed quick and well, requires a quickneſs of eye, and a dexterity of hand, which every man is not favored with: while ſome men catch the proper plants to be ſingled, and ſet them out, with a rapidity and neatneſs of execution, very pleaſing to the obſerver.

The hoe is generally drawn round the plant, with a long ſweeping ſtroke; and, when the plants are ſmall, this is the only ſtroke that can be uſed with propriety; but, when the plants are out of danger of being buried, a ſhort ſtraight ſtroke is more expeditious, and, in the hands of ſome few, makes tolerably good work.

Upon the whole, it matters not which way the operation be performed, provided the ground be ſtirred, and the weeds eradicated; the plants ſet out ſingly, and at proper diſtances.

3. The proper DISTANCE depends upon the ſoil, and the time of ſowing; jointly, and ſeparately.

Turneps

Turneps ſown, early, in a rich productive ſoil, require to be ſet out wider than thoſe ſown late, on a ſoil of a contrary nature.

If the ſoil be at par, the time of ſowing ought to regulate the diſtance: if this be at par, the nature or ſtate of the ſoil ſhould be the regulator.

Theſe rules, however, ſelf-evident as they undoubtedly are, are not attended to by the generality of farmers; who, led away by long-eſtabliſhed cuſtom, or by the intereſted perſuaſions of their labourers (farmers in all countries being more or leſs warped by the opinion of their workmen) ſuffer their turneps to be hacked out fourteen or fifteen, or perhaps eighteen inches aſunder, without any regard to the ſtate of the ſoil, or the ſeaſon of ſowing.

This practice was eſtabliſhed while the Norfolk ſoil was full of marl, and new to turneps; and when, it is probable, eleven or twelve inches in diameter was no uncommon ſize; with tops proportionally large and ſpreading: and fourteen or fifteen inches might, then, be a proper diſtance.

But, now, when the efficacy of marl is leſſened, and the ſoil no longer the favorite of

turneps,

turneps, which ſeldom reach more than ſeven or eight inches in diameter, it is ruinous and abſurd to continue the practice.

But the preſent price of hoeing was likewiſe eſtabliſhed when large turneps were grown, and when wide hoeing might, perhaps, be proper; and a workman cannot, at the preſent low wages, *afford* to ſet out the plants at a ſhorter diſtance; for though, in either caſe, he ſtir the whole ground, yet the more plants he has to ſingle, the more tedious the operation becomes.

If the plants be ſet out at eighteen inches — each ſquare yard contains four plants*: but, at twelve inches, the ſame ſpace of ground contains nine plants: ſo that in this caſe the hoer has more than twice the number of plants to ſingle and ſet out.

But does it not follow that the farmer has more than twice the number of turneps to fat his bullocks upon? and is not this intereſting fact a ſufficient inducement to farmers in general to break through a cuſtom whoſe original foundation no longer exiſts, and to ſilence the perſuaſions of their men by an adequate advance of wages?

There

If Mr. Marshall had paid attention

There are men, whoſe good ſenſe and diſcernment have ſhewn this matter to them in its true light, and who are fully aware that the "proof" of their turnep-crop depends more on its "tightneſs" than on the ſize of the plant. And it is the practice of theſe men I wiſh to hold out in ſtriking colours, in order that it may become the general practice of the Diſtrict; as well as to endeavour to do away a pernicious idea which has gone abroad reſpecting this part of the culture of turneps, in Norfolk; where good farmers do not ſuffer their turneps to be ſet out fifteen or eighteen inches apart; but rather from ten to fourteen, accordingly as circumſtances point out; and according to the ſituation of the plants with reſpect to each other.

Thus, if three plants ſtand in a line, the two outer ones fourteen inches aſunder, the intermediate one is, of courſe, taken out: but ſhould two healthy plants ſtand in a wide vacancy, thouſands of which vacancies generally occur in every piece of turneps, they are both of them ſuffered to remain, though they ſtand not more than ſix or eight inches from each other: for, when the tops have room to

ſpread

ſpread and wax large, the roots will encreaſe in proportion; and it is well known to thoſe who make obſervations on the growth of turneps, that, when the roots of two plants, thus ſituated, ſwell out till they touch each other, they become flat on the ſide in contact, but continue to ſpread on every other ſide, as if not incommoded by their contiguity; which, indeed, has one good effect: for, in endeavouring to preſerve their rotundity, they force each other into a heeling poſture, thereby giving their tops more freedom of expanſion; and it ſeems to be an undoubted fact, that the vigour of a given plant will ever keep pace with the ſize and number of its leaves.

This leads us to a general rule for aſcertaining the proper diſtance of turnep-plants; which ought to be ſuch as will give them room to keep themſelves in a ſtate of vigour and full growth; without leaving any ſpace of ground unoccupied by, or thinly filled with, leaves.

And this leads us round to the firſt poſition, —that the diſtance ought to be in proportion to the ſtate of the ſoil and the time of ſowing.

For, ſuppoſing a root of ſix inches diameter to require a ſpace of twelve inches ſquare,

to

to diffuſe its top in, the top of a root of ten inches would be crouded in the ſame ſpace; while one of a ſmaller ſize would leave the vacancy unfilled. And as turneps in this Diſtrict, now, run from four to eight inches in diameter, twelve inches may be taken as a proper *medium diſtance*.

To talk of *preciſe diſtances*, of turneps ſown broadcaſt, would be ridiculous, and beſpeak a want of knowledge of the ſubject: if a piece of turneps be examined after hoeing, though done by a workman, the variety of diſtances is endleſs; ſcarcely any two interſpaces being the ſame.

4. With reſpect to the SECOND HOEING, little can be ſaid; the firſt being a guide to this: the main purport of it is to looſen the mould, and draw it in ſome meaſure to the roots of the plants; to reduce the weeds effectually; and to ſingle ſuch plants as have been left double by the firſt hoeing; as well as to remove ſuch as have been miſſed; or, having been buried in the looſe mould in moiſt weather, have ſtruck root again in improper places.

It would be well, if at the time of the ſecond hoeing ſome of the ſupernumerary plants could

be tranſplanted into the vacant patches, in the manner that rape-plants are uſually done. This, however, cannot be practiſed with profit: turnep-plants may be got to live, but not to thrive after tranſplantation. Does it not, therefore, behove the turnep-grower to ſee, that, in the firſt hoeing, no artificial vacancies be added to thoſe, which too frequently abound, accidentally, or for want of a proper quantity of ſeed, in almoſt every turnep-ground?

On the contrary, a ſupernumerary plant may be removed on a certainty, and without additional labour or expence; for the ſtroke which looſens the ſoil, and eradicates the remaining weeds, diſplaces a ſupernumerary plant. Is it not, therefore, unpardonable management to ſet out the plants too thin the firſt hoeing?

The workmen, ſome farmers, and theoriſts in general, hold out a plauſible idea, which has ſome ſmall degree of truth in it: namely, that if the plants are not ſet out regularly the firſt hoeing, they cannot afterwards be regulated.

This, in rows of drilled turneps, would have ſome weight; *provided* every plant which was left could be inſured to *live*, and become a *thriving plant*. But, in a field of turneps ſown

at

at random, there is no ſuch thing as regularity of diſtance; and, here, the notion has little or no foundation.

Nor is regularity here neceſſary: for, ſuppoſing nine plants to grow in a yard ſquare, it appears to me a matter of ſmall conſequence, whether they ſtand exactly a foot apart; or whether ſome of them be fifteen and others only nine inches aſunder; provided they be ſo diſtributed, that their tops fill up a ſquare yard of ſpace above them: for, in the ſame manner as the tops of plants ſeek out for air and head-room above, in a ſimilar manner do their roots ſeek out for food and moiſture below.

I grant, that if I had my choice, I would prefer an exact regularity of diſtance; but I would much rather forego the mental gratification, than give up three or four turneps in a yard ſquare of ground.

Upon the whole, it ſtrikes me, that the object of the firſt hoeing, inſtead of being that of ſetting out the plants at exact and wide diſtances, ſhould be merely that of checking the weeds, and thinning the plants, to prevent their crowding each other; and that the regulation of diſtances ſhould be left in a great meaſure to

the laſt hoeing: in the firſt, *(by reaſon of the many accidents young turnep-plants are liable to)* it is a work of hazard and uncertainty; in the ſecond, not only proper diſtances, but proper plants, may be choſen, with a degree of certainty and ſafety.

With reſpect to timing the ſecond hoeing, it ought to be given before the leaves become too large, to prevent the plants from being properly ſingled and ſet out, or the weeds from being effectually cleared away; but the longer they ſtand before the laſt hoeing, the more effectually will the weeds be overcome.

5. The length of the HOE ſhould be in proportion to the *medium diſtance* between the plants, and *this* to their *expected ſize*.

The Norfolk hoes are, at preſent, out of all proportion to the preſent ſize of plants; and, conſequently, out of proportion to the proper medium diſtance. I have meaſured them nine inches and a half; there are many, I believe, of ten inches long: too long, in my opinion, for any turneps I have ſeen in Norfolk, by at leaſt two inches.

It is the hoer's intereſt to work with a long hoe; for in a ſoil free from obſtructions, the larger

larger the hoe the quicker he gets over the ground, and the fewer plants he has to ſet out; but unfortunately for the inattentive farmer, his intereſt is, in this caſe, in direct oppoſition to that of his workmen.

There are, however, as has already been obſerved, ſome good farmers who pay proper attention to their turnep-hoers, and who are well aware that a little attention, and a ſhilling an acre extraordinary, beſtowed upon the hoeings, is no object when compared with the difference between "a thight" and a thin crop of turneps;—between a crop worth forty ſhillings, and one worth four pounds an acre. The expence of rent, tillage, manure, and ſeed is, in either caſe, the ſame.

6. The preſent PRICE is ſix ſhillings an acre for the two hoeings, which are almoſt always let jointly; if they be ſeparated, the firſt is from three ſhillings and ſix-pence to four ſhillings; the laſt from two ſhillings to two ſhillings and ſix-pence.

Theſe are low prices when compared with thoſe of other countries, where eight ſhillings, ten ſhillings, or twelve ſhillings, an acre, are given for the two hoeings. But there are two

reaſons for this diſparity. In Norfolk every countryman is a turnep-hoer, and is generally expert, compared with thoſe of other places; where hoeing turneps is a myſtery, known only to gardeners, and a few individuals who, though inexpert, have it in their power to make their own prices. The other is the friability of the Norfolk ſoil, and its freeneſs from obſtructions; while ſoils, in general, are either in themſelves ſtubborn, or contain ſtones or other obſtructions of the hoe.

8. The APPLICATION. Turneps are either cultivated

For ſeed,
For ſale, or
For conſumption.

1. SEED.—Many farmers raiſe their own ſeed; though this is not a general practice; yet moſt good farmers, who are curious in their ſtock, either raiſe it themſelves, or have it raiſed from their own ſtock by a labourer or other neighbour.

The Norfolk farmers are maſters in the art of raiſing turnep-ſeed, in which, as in many other ſubjects in huſbandry, their ideas are remarkably clear and accurate. It is generally underſtood,

underſtood, in other parts of the kingdom, that no turnep-ſeed is fit to be ſown which has not been raiſed from tranſplanted roots. But not ſo in Norfolk, where ſeed is frequently raiſed from untranſplanted turneps.

It is a fact well underſtood by every huſbandman, here, that if the ſeed be gathered repeatedly from untranſplanted roots, the plants from this ſeed will become "coarſe-necked" and "foul-rooted;"—and the fleſh of the root itſelf will become rigid and unpalatable. On the contrary, if it be gathered, year after year, from tranſplanted roots, the necks will become too fine, and the fibres too few; the entire plant acquiring a weak delicate habit, and the produce, though ſweet, will be ſmall. For the neck, or on-ſet of the leaves, being reduced to the ſize of the finger (for inſtance), the number and ſize of the leaves will be reduced in proportion; and in a ſimilar proportion will the number and ſize of the fibrils be reduced. From a parity of reaſoning it may perhaps be inferred, that when the neck acquires a thickneſs equal to that of the wriſt, the ſize of the root will be in proportion.

With reſpect to the *fibres* or rootlings, this is a juſt inference; but with reſpect to the *bulb*, it is in great meaſure erroneous. For a few generations the ſize of the bulb will keep pace with the increaſe of leaves and fibres; but after having once reached the limits, which nature has ſet to its magnitude, it begins to revert to its original ſtate of wildneſs, from which to its preſent ſtate it has, beyond diſpute, been raiſed by tranſplantation.

The farmer has therefore two extremes, both of which he ought to endeavour to avoid. The one is diſcoverable by the thickneſs and coarſeneſs of the neck, the ſcaley roughneſs of the top of the bulb, the thickneſs of the rind in general, the foulneſs of its bottom, and the forkedneſs of its main or tap-root: the other, by the ſlenderneſs of the neck, the fineneſs of the leaves, and the delicacy of the root. The former are unpalatable to cattle, and are thereby creative of waſte: the latter are unproductive; are difficult to be drawn; and do not throw out ſuch ample tops in the ſpring, as do thoſe which are, by conſtitution or habit, in a middle ſtate between thoſe two extremes.

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There is not, however, any general rule reſpecting how many years turneps ought to be tranſplanted ſucceſſively, and how often they ought to be ſuffered to run up from the ſeed-bed: the ſoil and ſituation have, and other circumſtances may have, influence on the habit or conſtitution of vegetables as of animals; and the farmer muſt attend alone to the ſtate of the turneps themſelves. Whenever he judges that by repeated tranſplantation they have paſſed the acme of perfection, have paſſed that height to which nature has ſaid, "So far ſhalt thou go, and no farther," then it is his duty and intereſt to let them run up to ſeed without tranſplantation.

In Norfolk it has been found, from long experience, that tranſplanting two, three, or four years, and letting the plants run up the third, fourth, or fifth, will keep the ſtock in the deſired ſtate.

The time of tranſplanting is from old Chriſtmas to old Candlemas.

In *the choice of plants*, the farmer is not guided by ſize; but "picks the cleaneſt plants," without regard to the ſize: or, more accurately ſpeaking, he makes choice of ſuch

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as are near, but not at, or above, the ſtate of perfection. In almoſt every piece of turnep there are plants in various ſtates: much judgment, therefore, is requiſite in the choice of plants.

The choice of ſoil and ſituation for this purpoſe is pretty uniform; a piece of good ground, near a habitation, being generally pitched upon.

But *the method of planting* is various: the plants are generally ſet in rows; but the diſtance between the rows, and between plant and plant in the rows, is uncertain. I have meaſured the rows ſixteen or eighteen inches apart, and the plants eight or ten inches aſunder. I have alſo obſerved them planted in two-foot rows, and twelve inches in the rows. But the practice of a man who indiſputably ſtands near the head of his profeſſion, is to plant them in rows about two feet aſunder, without any intermediate ſpace in the rows; in which the plants ſtand in contiguity.

The vegetating-proceſs conſiſts in keeping the intervals clean-hoed; and when the ſeed verges towards ripeneſs, in preſerving as much of it as poſſible from birds. If the plot be large, a boy

is generally employed to ſcare them. When the plot has been ſmall and near the houſe, I have known a ſimple expedient uſed for this intent with ſucceſs. On a ſlender poſt, riſing in the midſt of the patch of ſeed, was fixed a bell; from which a line paſſed into the kitchen; in the moſt frequented part of which hung the pull. Whoever paſſed the pull, rung the bell; ſo that in a farm-houſe kitchen, where a miſtreſs and two or three maids were ſome of them almoſt always on the foot, an inceſſant peal was kept up; and the birds, having no reſpite from alarms, forſook their prey.

2. Sale. It is not a practice among the generality of farmers to raiſe turneps for ſale; nevertheleſs there are every year more or fewer ſold. Little farmers, who want conveniency or ſkill, and larger ones who want money to lay in a proper ſtock, or who from the prices of ſtock and turneps, comparatively, judge it more eligible to ſell than to "graze,"—ſell their turneps to thoſe who have judgment, money, and ſpirit to buy ſtock.

Sale-turneps are uſually conſumed on the premiſſes they grow upon. Sometimes the buyer and ſometimes the ſeller draws the crops, and

and tends the cattle; for which ſometimes the one and ſometimes the other finds ſtraw.

The medium price of a middling crop of turneps is about 50*s.* an acre; but the price is ſubject to great and ſudden fluctuations; as will appear in MIN. 68.

3. CONSUMPTION. This is the grand purpoſe for which the turnep-crop is principally cultivated.

Turneps are almoſt univerſally "pulled;" that is, drawn up by the roots. The practice of hurdling them off with ſheep, as they ſtand, the almoſt only practice of other countries, is not in uſe in Norfolk. I do not recollect to have obſerved one inſtance of this practice, unleſs when the turneps were very ſmall, or very thin.

But the Norfolk practice is not more ſingular with reſpect to the mode of application, than with reſpect to the ſpecies of ſtock to which turneps are applied. In moſt places SHEEP are the chief conſumers; but, here, CATTLE are almoſt the only object of the turnep culture. I ſpeak more particularly of the practice of *this* Diſtrict: in which, as I have before intimated,

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the genuine ſyſtem of Norfolk huſbandry is practiſed.

There are three ways of *harveſting* the turnep-crop:

A. Drawing and carting off the whole crop.

B. Drawing and diſtributing the whole over the turnep-ground.

C. Carting off half, and diſtributing half.

The two laſt, however, are in uſe only where ſheep are the ſole or joint conſumers. The firſt, therefore, may be called the general practice: and it is probable that nine-tenths of the turneps grown in Eaſt-Norfolk are harveſted in that way.

A. CARTING-OFF THE WHOLE. This proceſs merits a minute deſcription.

a. The time of drawing commences about Michaelmas, and continues until the plants be in blow.

b. The proceſs of drawing. This, in ſevere weather, is an employment which nothing but cuſtom could reconcile, to thoſe whoſe lot it is to go through it: namely, ſtout lads and youths; whoſe hands are frequently ſwelled until the joints are only to be diſcerned by the dimples they form; nevertheleſs, I have not heard an inſtance

inſtance of ill conſequence from this circumſtance.

Their method of pulling, when the tops will bear it, is very expeditious: they pull with both hands at once; and, having filled each hand, (one on one ſide of them, the other on the other) they bring the two handfuls together with a ſmart blow, to diſengage the ſoil from the roots; and, with the ſame motion, throw them jointly into the cart.

If the tops be cut off by the froſt, or if this be in the ground, they are pulled with "crooms"—two-tined hooks.

If a deep ſnow bury the roots, it is removed with the ſnow-ſledge (ſee IMPLEMENTS).

It is cuſtomary to begin pulling under the hedges, clearing the head-lands and ſide-lands firſt; and then, if the whole crop be carried off, to begin on one ſide, and clear the ground progreſſively for the plow.

If the area be broken into,—a lane is made for the horſe and cart, by drawing the turneps; and, while their tops remain ſucculent and valuable, ſetting them in double handfuls on each ſide the road; by which means the tops are preſerved as free from dirt and

taint

taint, as if the handfuls were thrown immediately into the cart.

It is cuſtomary, in drawing turneps, to clear them away entirely, great and ſmall: I met with one inſtance, however, and that in the practice of a good huſbandman, of the ſmall ones being left upon the ground: not more to encreaſe in ſize, than to throw out tops in the ſpring; it being obſervable, that a ſmall turnep ſends up a top nearly equal to that of one whoſe bulb is larger. There is one inconveniency ariſing from this practice: the plow is prevented from entering upon the ſoil until late in the ſpring; and this, upon ſome ſoils, is an unſurmountable objection. Upon land, however, which will bring good barley with one plowing after turneps, it may be very eligible management.

c. The method of giving them to cattle. This is threefold.

Firſt, They are thrown on ſtubbles, graſslands, and fallows, to cattle abroad in the fields.

Second, They are given in bins, in the ſtraw-yard, in which the cattle go looſe.

Third, They are given to cattle tied up in houſes or under ſheds.

The

The *firſt* is the prevailing practice: perhaps, three-fourths; perhaps, a greater proportion of the bullocks fatted on turneps in this Diſtrict are fatted abroad in the fields.

The general practice is to begin with the wheat-ſtubbles, on which turneps are uſually thrown until they be broken up for fallow for barley. The next throwing-ground is frequently the barley-ſtubbles, which receive the bullocks as the wheat-ſtubbles are ſcaled in; and retain them until they, in their turn, are broken up for turnep-fallow. From about Chriſtmas until the beginning of April, the clover-lays, only, are thrown upon: and after theſe are ſhut up, (in order to acquire a bite of rye-graſs for the unfiniſhed bullocks,) the turnep-fallows, ſometimes, become the ſcene of throwing.

Theſe rules, however, are not always ſtrictly obſerved: ſome farmers objecting to throw turneps on land intended for turneps the enſuing year, under an idea that it is productive of the Anbury. In this caſe, the clover-lays ſucceed the wheat-ſtubbles, ſome part of them being kept open until the turnep-crop be finiſhed in the ſpring. Young clovers are

ſome-

ſometimes thrown upon; but this is ſeldom done, unleſs there does not happen to be a clover-ſtubble in the neighbourhood of the turnep-piece; and even then, it is conſidered as bad management; unleſs the ſeaſon be very dry, and the ſurface ſound.

In a wet ſeaſon, the Norfolk farmers, even on their dry ſoil, are ſometimes put to inconveniences for clean ground to throw upon; and, notwithſtanding the value of teathe, when the land will bear the bullocks, I have known a farmer aſk leave of his neighbour to let him throw turneps upon an adjoining piece of ſound olland; rather chooſing to loſe his teathe than check his bullocks.

Hence, in laying out a Norfolk farm, it is proper to endeavour to intermix the crops in ſuch a manner that a piece of turneps ſhall have, at leaſt, two pieces of lay in its neighbourhood.

The method of throwing turneps is ſimilar to that of ſetting on manure; the carts beginning on one ſide of a cloſe, and working regularly to the other; giving every part an equal ſhare; and never throwing twice in the ſame place, until the whole has been gone over.

At the beginning of the throwing-ſeaſon, while graſs is ſtill in plenty for lean ſtock, it is uſual to keep the fatting-cattle conſtantly in the ſame piece of wheat-ſtubble, giving them a freſh ſupply of turneps every day, or every two days at fartheſt.

But the clover-ſtubbles being cleared from graſs, and the ſtore-beaſts beginning to want aſſiſtance from turneps, the fatting-cattle have their "followers,"—that is, rearing-cattle:—lean bullocks, cows, or ſtore-ſheep follow them to pick up their leavings.

In this caſe it is convenient to have three "ſhifts," that is, three pieces of throwing-ground, going on at the ſame time:—one for the head beaſts, one for the followers, and a third empty to throw in. Two pieces, or two diviſions of the ſame piece, are indiſpenſibly neceſſary.

Sometimes a row of hurdles is run acroſs a throwing-piece to divide the "bullocks" from the "followers;" and I have known a boy employed for the ſame purpoſe.

Good farmers are very attentive to having the turneps thrown evenly and thinly; it being a maxim, that while a bullock is breaking one turnep,

turnep, he ſhould not have it in his power to tread or dung upon another. This, however, is ſeldom effectually guarded againſt. If turneps be ſcattered a yard aſunder, they are not ill thrown: it is too common to ſee them thrown in "rucks" and "ringes" by half dozens together.

They are thrown by hand, by a boy ſtanding in the cart, which keeps going on as he throws them out,—with their tops and tails on, as they were drawn out of the piece.

Bullocks at turneps abroad, are ſometimes, when the diſtance is not too great, driven into the ſtraw-yard at night;—and ſometimes have a little ſtraw given them under the hedge of the throwing-piece, where they ſleep, entirely abroad. See MIN. 69.

The quantity of ſtraw carried to them is very ſmall; being meant merely to "clean their mouths" from the dirt of the turneps; which, alone, are depended upon for bringing the cattle forward.

It is indeed an intereſting fact, that not one in ten of the high-finiſhed bullocks, which are annually ſent to Smithfield-market out of Norfolk, taſte one handful of hay; or any other

food, whatever, than turneps and barley-ſtraw; excepting ſuch as are finiſhed with rye-graſs in the ſpring; and excepting ſome few fatted by ſuperior graziers, who make a point of giving their bullocks at turneps a little hay, towards ſpring, when the turneps are going off, before the rye-graſs lays be ready to receive them.

An excellent practice, this, which ought, if poſſible, to be univerſally copied: for without this precaution, bullocks are liable to receive a check between turneps and graſs.

The *ſecond* method of fatting cattle with turneps is, to keep them in a looſe ſtraw-yard; giving them turneps in cloſe bins; namely, a kind of ſmall cow-crib with boards, or bars nearly cloſe, at the bottom.

Theſe bins are diſtributed about the yard, and the turneps uſually put into them whole; but, in this caſe, they are always "tailed"—that is, have their tap-root lopped off—in the field; and, unleſs the tops be freſh and palatable, they are uſually "topped-and-tailed," giving to the fatting bullocks the bulb only; the tops, if eatable, being given to ſtore-cattle.

Bullocks in the yard have ſometimes their ſtraw given them in cribs; and ſometimes have

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it ſcattered in little heaps about the yard, two or three times a day: the quantity of it eaten is in either caſe ſmall; and, with the latter management, the yard becomes evenly littered without further trouble.

This method of fatting bullocks on turneps is ſomewhat more troubleſome than that of throwing to them abroad; which, if the ſoil be dry enough to bear ſtock, and light enough to require "jamming,"—is perhaps, upon the whole, the moſt eligible management: but in a deep-land ſituation, and in a wet, or a ſevere ſeaſon—the yard, if it be kept dry and well littered, is the more comfortable place; eſpecially if it be provided with open ſheds for the cattle to take ſhelter under in inclement ſeaſons.

The teathe of bullocks abroad is no doubt highly ſerviceable to land; eſpecially to a light ſoil; while bullocks at turneps in a yard well littered make a great quantity of good manure.

The *third* method is to keep the cattle tied up in hovels, or under open ſheds, with troughs or mangers to receive the turneps; which, in this caſe, are frequently "chopped;"

that is, cut into *ſlices*; or more generally, though perhaps leſs eligibly, into *quarters*, with a ſmall hedging-bill, or other chopper, upon a narrow board or ſtool, with a baſket underneath to catch the pieces as they are chopt off. The turnep in this operation is held by the top; which, when wholly diſengaged from the root, except the coarſe part immediately about the crown, is thrown aſide for the ſtore-cattle. The tap-root and bottom-rind are ſliced off with the firſt ſtroke, and ſuffered to drop on one ſide the ſkep; ſo that the fatting-cattle, in this caſe, have only the prime part of the bulb.

This accounts for the quick progreſs which "ſhed-bullocks" ſometimes make; eſpecially in cold weather. But on account of the extraordinary attendance they, in this caſe, require,—not only in cutting the turneps, but in littering and cleaning out their ſtalls,—beſides the checks which they are liable to receive in cloſe muggy weather—the practice is ſeldom followed by large farmers in *this* Diſtrict; unleſs to puſh forward ſome particular individuals.

Among little farmers, who have leiſure and inclination to tend their own ſheds, the practice

tice is not uncommon; and much depending on care and management in this buſineſs, they may, probably, find their account in it. Under this treatment, the cattle have a little barley-ſtraw given them, from time to time, to clean their mouths, and dry up the ſuperfluous juices of the turnep.

Sometimes ſhed-bullocks are "blown up" with pollard and barley-meal; but this is conſidered as an unfair practice by the butchers in Smithfield, who prefer turneps and hay in winter, and rye-graſs in the ſpring, to every other kind of fatting.

In the ſouthern Hundreds of this Diſtrict, the ſoils of which are, in general, too tender to bear cattle with propriety in a wet ſeaſon, the yard and the ſhed are more common receptacles of bullocks than they are in *this* neighbourhood.

In Blowfield Hundred, a commodious but expenſive ſhed prevails: it has one main advantage over the little hovels in which bullocks are ſometimes cooped up: the lofty, ſpacious area in which the bullocks breathe, affords them a plentiful ſupply of freſh air,

and keeps their bodies in a due degree of temperature.

For a deſcription of one of theſe ſheds, ſee MIN. 118.

B. DRAWING AND DISTRIBUTING THE WHOLE CROP OVER THE TURNEP-GROUND. This being only in uſe where a large flock of ſheep is kept and few bullocks are fatted, it is ſeldom practiſed in Eaſt-Norfolk. It differs from the ordinary method of hurdling off turneps, in that the ſheep, inſtead of being put upon the plants as they ſtand, are kept back upon the cleared ground, upon which the turneps are thrown. But as, in this caſe, the turneps muſt either be thrown in part over the ground already fouled by the ſheep; or be confined to a ſpace ſimilar to that off which they are drawn;—by which means the principal intention of drawing is fruſtrated;—a third method of harveſting has been invented: namely,

C. CARTING OFF HALF AND DISTRIBUTING HALF. This ingenious method is, I believe, of modern invention; and is now chiefly practiſed by a few capital farmers, who fat large quantities both of cattle and ſheep.

In

In this caſe, the headlands and ſidelands being cleared, the area is drawn and carried off, warp for warp; leaving the piece in ſtripes, about ten paces wide.

The firſt drawing is expended on the bullocks in one or other of the ways already deſcribed; while the remaining ſtripes are drawn and ſcattered over the entire ground for ſheep.

By this means the principal intention of drawing is obtained; namely, that of diſtributing the turneps evenly and thinly; ſo that while one is eaten, another may not be ſoiled: a principle which, it may be taken for granted, is well founded; as it is ſtrictly and invariably attended to by good farmers in general.

This advantage, however, does not appear to me to be the only one obtained by drawing turnep for ſheep in the fold.

When a flock of ſheep are turned upon a ſhift of ſtanding turneps, the firſt thing they do is to run over the whole; and, then, to eat ſuch of the tops as they have not trampled down in running over them. While they are doing this, they ſtand upon the roots: which, being firm in the ground, and flat on the

the top, are no way inconvenient to ſtand upon. But what is worſe, if the foot happen to fall near the edge of the turnep, the ſharpneſs of the hoof, and the fixed ſituation of the root, renders it liable to be barked, as well as fouled, and rendered unſavoury to this faſtidious animal.

On the contrary, if ſheep be put upon drawn turneps, their tops may be in ſome meaſure injured, but their roots cannot; for being round, and lying looſe upon the ſurface of the ground, they afford no foot-hold to ſtand upon. And, if the hoof be put upon the edge, the turnep rolling with the ſlighteſt touch, the foot ſlips, and the rind is ſaved. Thus the roots in this caſe, inſtead of being foot-ſtools become ſtumbling-blocks to the ſheep; which, carefully avoiding the turneps, ſtand, in this caſe, entirely upon the ground; which, under theſe circumſtances, is left almoſt wholly free for their feet; the turneps touching it with a ſmall portion of their circumferences only; whereas, in their natural ſtate of growing, they occupy a conſiderable portion of the ſurface.

For

For obſervations on *ſteeping the ſeed*, and *reſowing*, ſee MIN. 3.

For obſervations on the *turnep-caterpillar*, ſee MIN. 12.

For obſervations on the *grub* and *Anbury*, ſee MIN. 20.

For an inſtance of the "*fly*" being checked by the ſheep-fold, ſee MIN. 21.

For preventatives of the *Anbury*, ſee MIN. 22.

For experiment with *lime* for turneps, ſee MIN. 29.

For the *quantity* of turneps eaten by bullocks in the yard, and calculation on their *produce value*, ſee MIN. 56.

For an incident reſpecting the "proof" of turneps; and reaſons accounting for it by a particular *ſoil-proceſs*, and *cloſe hoeing*, ſee MIN. 57.

For a ſimple way of *preſerving turneps* in winter, and reflections upon it, ſee MIN. 61.

For inſtances of the *price* of turneps, ſee MIN. 68.

For comparative obſervations on *ſhed* and *out-door* bullocks, and on the practice of *individuals* in fatting *bullocks* on turneps, ſee MIN. 69.

For

For a particular *ſeed-proceſs*, ſee MIN. 71.

For the practice of ſundry *individuals* in the conſumption of turneps on *ſtore-cattle*, ſee MIN. 74.

For an opinion reſpecting the great uſe of turneps to *cows* in the ſpring, ſee MIN. 83.

For a deſcription of the manner in which bullocks *break* their turneps, ſee MIN. 84.

For obſervations on the expenditure of turneps in *Fleg*, ſee MIN. 106.

For further obſervations on the turnep *Caterpillar*, and of the *Tenthredo* which produces them, ſee MIN. 122, 124, 129, and 132.

For further obſervations on the *application* of turneps, ſee the article BULLOCKS, and the MIN. from thence referred to.

34.

CULTIVATED GRASSES.

UNDER THIS HEAD it will be proper to conſider,

1. The ſpecies,
2. The ſoil,
3. Succeſſion,
4. Seed-proceſs,
5. Vegetating-proceſs,
6. Firſt-year's lay,
7. Second-year's lay.

I. SPECIES. The cultivated graſſes of this Diſtrict are,

Darnel,—*lolium perenne*,—rye-graſs;

Clover,—*trifolium pratenſe*,—red clover;

Suckling,—*trifolium repens*,—white clover;

Black nonſuch*,—*trifolium agrarium*,—trefoil hop-clover,—or yellow clover;

Suffolk graſs,—*poa annua*,—dwarf meadow-graſs.

* By "black nonſuch" is meant trefoil in the huſk; in contradiſtinction to darnel, which is frequently called "white"

The firſt two are the principal graſſes ſown in the regular courſe of huſbandry; but generally with ſome admixture of the third or fourth ſpecies: the laſt is ſown only when a perennial lay is intended; a thing which is ſeldom attempted in this Diſtrict.

A new ſpecies of productive nutritive graſs would be very acceptable to the huſbandry of Norfolk; whoſe lands, to uſe the provincial phraſe, are "tired of clover *."

If we conſider the length of time which clover has been ſucceſſively ſown on the Norfolk ſoil, this circumſtance is not extraordinary; as it has likewiſe taken place in Diſtricts where the cultivation of clover is a more modern practice than in Norfolk; where it has been cultivated time immemorial.

A ſmall incloſure near Ayleſham is ſhewn as the firſt piece of land which bore clover, in

"white nonſuch." Trefoil-ſeed freed from the huſk, is called "hulled nonſuch."

* I made a trial of rib-graſs (*plantago lanceolatus*), but gained no credit from the experiment: for although this graſs be ſown in conſiderable quantities in ſome parts of the kingdom, it is in Norfolk conſidered as a weed: the fact is, horſes do not affect it; and theſe are the principal conſumers of the clover-crop, in this country.

this

this Diſtrict. But even this circumſtance is now become merely traditional; no perſon now living being able to ſpeak to it with certainty.

It is obſervable, however, that land, though it be no longer the favorite of clover, will bring up the ſeed perfectly well; and, if the plants are not cut off in their infant ſtate, will ſupport them through the winter, with vigour and apparent healthfulneſs. But in the ſpring, when the plants begin to want a more ample ſupply of nouriſhment than the ſoil is enabled to furniſh them with, they droop and dwindle, and frequently, in a few weeks, entirely die away.

Even on the freſheſt ſoils clover ſeldom ſtands more than one year; going off entirely the ſecond ſpring; leaving the darnel (unleſs ſome other graſs be ſown) in full poſſeſſion of the ſoil.

This circumſtance, however, is no great inconvenience in the preſent ſyſtem of Norfolk huſbandry: if the clover afford a ſufficiency of herbage and hay, the firſt year, its chief duty is done: rye-graſs having been found, from long experience, to be of all other graſſes, yet cultivated, the beſt for finiſhing turneped

bullocks

bullocks in the ſpring; not only as being early and productive; but as being of an uncommonly "forcing," that is, fattening nature.

Its duration, however, is tranſient; and ſuckling, or other ſummer graſs, is uſeful to keep up a bite for the ſtore-cattle, until the ſecond-year's lays be broken up for the wheat-fallow.

II. Soil. They are ſown indiſcriminately on every ſpecies.

III. Succession. They are raiſed almoſt invariably with barley after turneps: ſometimes, but not uſually, they are ſown over wheat after turneps.

IV. Seed-process.—1. The time of sowing graſs-ſeeds is ſomewhat ſingular. It is not immediately after the ſowing of the barley; nor after it is up; but generally, between the ſowing of the barley and its appearance above-ground.

This, on a dry ſoil, and eſpecially in a dry ſeaſon, appears to a ſtranger extraordinary management; and why the moiſture which is

turned

turned up to the ſurface by the ſeed-earth of the barley ſhould be ſuffered to evaporate before the graſs-ſeeds are lodged among it, is rather inexplicable; unleſs it be intended to gain a freſh advantage over the root-weeds which have been harrowed up in covering the barley.

Or, perhaps, the practice has been eſtabliſhed on a ſtill broader baſis. It has, perhaps, been found, from long experience, that the moiſture turned up by the ſeed-plowing of the barley, is, ſometimes, ſufficient to bring the graſs-ſeed into a ſtate of vegetation, without being able to ſupport them through a continuance of dry weather: whereas by ſuffering the ſurface-mould to dry before the ſeeds be ſown in it, they lie in a ſtate of ſafety until rain falls; while the barley, being buried deeper, gets up to ſhade the tender ſeedlings; and at the ſame time gets, as it ought to do, the aſcendency of the graſs-ſeeds.

2. Preparation of the seed. I did not meet with an inſtance of any preparation being made uſe of, in this Diſtrict.

3. Method of sowing. The different ſorts are uſually mixed and ſown together;

the quantity of rye-graſs being ſmall; the ſeedſman taking care to ſtir them up, from time to time, to prevent the ſmalleſt and heavieſt from ſettling at the bottom of the bowl or hopper.

4. QUANTITY OF SEED.—This varies with the quality of the ſeed, and the opinion of the farmer: half a peck of rye-graſs! and *to the amount of* twelve or fourteen pounds of clover, an acre, may be taken as the medium quantity: if two or three pounds of ſuckling, or three or four pounds of "hulled nonſuch," or a proportional quantity of "black nonſuch," be ſown, the quantity of red clover is proportionably leſs.

5. The ſeeds are generally COVERED with a pair of ſmall harrows, drawn backward, to prevent the teeth from tearing up the clods, diſturbing the barley, or burying the graſs-ſeeds too deep.

V. VEGETATING-PROCESS. The "young ſeeds" are ſtudiouſly kept from ſheep the firſt autumn and winter. They are, however, *eaten* freely with young ſtock and other ſtore-cattle; and for conveniency have ſometimes turneps

thrown

thrown upon them: but this, as has been obſerved, is not a general practice; nor is it eſteemed a judicious one; unleſs the ſoil be very firm and the ſeaſon dry. They are ſometimes *top-dreſſed* in winter, with dung or compoſt; but this is a practice confined to a few individuals. In the ſpring of the firſt year, they are univerſally *ſtone-picked*; but, extraordinary to relate, they are rarely, if ever, *rolled* either the firſt or the ſecond ſpring.

VI. FIRST-YEAR'S LAY.—1. This is generally SHUT UP in the month of April, and either ſuffered to ſtand for hay; or is paſtured, or roped upon, by the working-horſes. See HORSES.

2. CLOVER-HAY is mown with the ſame ſithe, and is lifted or turned in the ſame manner, as BARLEY. The great ſingularity reſpecting the treatment of clover-hay, in Norfolk, conſiſts in its being univerſally made into large cocks, as ſoon as it is weathered enough to prevent its damaging in theſe cocks; in which it frequently ſtands a week, or, perhaps, a fortnight.

By cocking it in this manner before it becomes too criſp, the leaf and the heads are ſaved; but heavy rains ſometimes do it great injury in this ſtate. From ſlighter rains and tranſient ſhowers it is, however, much ſafer in theſe large cocks (four, five, or ſix of which will generally make a load), than in ſwaths; whoſe ſurfaces being large in proportion to their bulk, and their ſituation being low, are liable to receive damage from every ſhower; while the ſurfaces of large cocks are comparatively ſmall, and, their ſituation being elevated, the wet is licked up by the firſt breeze of wind.

Clover is ſeldom mown more than once; except for ſeed; the ſecond crop being uſually eaten-off with ſtore-cattle; for which the clover-ſtubbles are neceſſary receptacles, after the rye-graſs lays are broken up for wheat.

3. RAISING SEED-CLOVER is not a practice of this Diſtrict. The principal part of that which is ſown in it is raiſed in Suffolk, and the Suffolk-ſide of Norfolk; the quantity ſaved in this part of the county being ſmall, compared with the quantity ſown. See MIN. 101.

VII. THE

VII. THE SECOND-YEAR'S LAY. This is invariably paſtured (unleſs ſome ſmall ſhare be ſuffered to ſtand for darnel-ſeed); the ſpring ſhoot being uſually expended in "topping up" turneped bullocks: for which purpoſe no other vegetable is, perhaps, ſuperior to rye-graſs.

Store-cattle follow the bullocks (which generally are all ſent to Smithfield by the middle of June), and keep poſſeſſion of the ſecond-year's lays, until they be broken up for wheat, in July, Auguſt, September, or October, agreeably to the SOIL-PROCESS made uſe of for WHEAT; which ſee.

For an inſtance of ſowing clover in autumn, ſee MIN. 24.

For an account of Norwich clover-ſeed market, ſee MIN. 101.

For a ſingular effect aſcribed to clover, in Fleg, ſee MIN. 106.

35.

NATURAL GRASSES.

IN DESCRIBING the management of the different kinds of GRASSLANDS, it will be neceſſary to treat ſeparately of each SPECIES, namely,

1. Grazing-grounds,
2. Meadows,
3. Marſhes,
4. Fens.

I. GRAZING-GROUNDS.—If we except the parks and paddocks of men of fortune; who, through economy or faſhion, have, in general, diſparked their deer, and converted their parks and paddocks into ſheep-walks and grazing-grounds; we find very little upland graſs in *this* Diſtrict: I recollect only one piece, of any extent, in the occupation of farmers.

There are two cauſes of this ſcarcity of natural graſsland: the ſoils of this neighbourhood,

and

and of the entire county, taken in a general point of view, are of a quality ungenial to the natural graſſes. If a piece of arable land be laid down to graſs, in the courſe of a very few years it becomes moſſy and unproductive, and calls aloud for the plow and harrow.

The other is, the high price which corn bore a few years ago. This urged the farmer to increaſe his arable land to the ſtretch: not only UPLAND graſs, but even bogs appear to have been ſubjected to the arable proceſs; though, in their preſent ſtate, too moiſt and chilly to bear even the finer graſſes; much more to ſupport and mature profitable crops of corn.

This is far from being intended as a general cenſure of the anxiety of the Norfolk huſbandmen to increaſe the quantity of arable land; for I am of opinion, that there is ſcarcely an acre of land in the county which is not worth more under the Norfolk ſyſtem of aration than it would be in any other ſtate; *except* the MEADOWS, the MARSHES, and the FENS; which I am equally clear in opinion ought to be improved as graſsland, or as ſources of turf, reed, oziers, ſedge, or other aquatic and paluſtrean productions; and ought not, under any

pretence whatever, to be attempted to be reduced to arable land.

II. Meadows. The ſpecies of graſsland which paſſes under this denomination in Norfolk, is confined to thoſe bottoms, or vallies, which accompany, almoſt uniformly, the rivulets which abound in Eaſt-Norfolk.

Theſe vallies vary in width and depth. In ſome places the bed of the rivulet is ſunk deep and narrow, in an almoſt level ſurface; ſo that the arable land comes down to its brink: in others, the valley is wide, and the bottom flat; and, in this caſe, the ſides of the valley are ſometimes low with an eaſy ſwell, ſometimes bold and lofty: *this* however is ſeldom the caſe; the Norfolk meadows in general lying in gentle dips a few feet below the level of the upland, and from half a furlong to two or three furlongs wide.

This dip, gentle as it may be, ſubjects them in general to a pernicious redundancy of ſubterranean moiſture.

The Norfolk ſoil, in general, is, as has been repeatedly obſerved, of a nature unuſually abſorbent; drinking up the rain-water as faſt

as

as it reaches the earth: a flood is ſeldom heard of in Norfolk. The waters thus abſorbed are liable to be obſtructed by beds of marl and clay: if an obſtruction take place on the verge of a valley, the waters obſtructed ouze out, or attempt a paſſage, on its ſides; and riſe, or attempt to riſe, out of its baſe. Thus, land-ſprings, quick-ſands, hanging tumours, and bogs occur in almoſt every meadow: and where none of theſe actually take place, a coldneſs uſually prevails in every part of the area (except in very dry ſeaſons); owing to the lowneſs of the ſituation, compared with the neighbouring upland; whoſe abſorbed waters, though they ſink beneath the corn-mould, and though they may meet with no particular obſtruction, yet, in a wet ſeaſon, are, in all human probability, collected, more or leſs, at the depth of a few feet below the ſurface.

Be this as it may, the chilneſs which prevails in the lower parts of the meadows, deſtroys or checks the better graſſes, and produces or encourages alders, ſedge, ruſhes, and the whole tribe of paluſtrean weeds: while the

the upper margins are productive of furze, fern, and ant-hills.

Such, from ſituation, is the *natural ſtate* of the Norfolk meadows; and ſorry I am to add, that, with a few exceptions, *ſuch is their preſent ſtate.*

Admirer as I am of the arable management of this country, and cautious as I wiſh to be of cenſuring, without cauſe, any department of its rural economy; I cannot refrain from condemning, in full terms, its graſsland management.

Having, however, minuted my ſentiments on this ſubject, as they occurred from time to time, in the courſe of my obſervation or practice; I ſhall, in this place, only give a ſketch of the preſent management, ſuch as it is, and draw what appears to me the general *outline* of improvement.

In winter, or towards ſpring, when the land-ſprings are flowing and the bogs full of water, a few paltry grips are, ſometimes, made acroſs ſuch parts of a meadow as are no longer able to bear paſturing-ſtock: theſe grips being uſually run in a perpendicular direction, from the rivulet toward the upper margin.

But,

But, frequently, even this is omitted; or, if once done, is ſo long neglected, that its effect is loſt.

Beſides this faint attempt at improving the ſubſtratum, the ruſhes and other tall weeds on the ſurface are *ſometimes* ſwept down with the ſithe;—and ſometimes left to enjoy their natural right.—Thus much as to *improvements*.

With reſpect to the *uſes* to which theſe moraſſes are applied, they are principally confined to that of keeping young cattle from ſtarving: cows are ſometimes truſted in them; but in general their ſurfaces are too rotten, and their herbage too rank, for this ſpecies of ſtock: and common prudence, reſulting from dear-bought experience, generally prevents the farmer from truſting either his ſheep or his horſes in his "meadows;"—leſt the former ſhould be ſubjected to the rot, and the latter be ſmothered in the peat-bogs.

When the young cattle have picked out the little graſs they can find,—the ſedge and other aquatic weeds of the bogs are ſometimes mown, and carried off by hand, for litter; and ſometimes ſuffered to die and rot on their native bogs, whoſe depth is thereby annually increaſed.

creaſed. Upon the ſounder better parts, the ruſhes and rough graſs are, ſometimes, made into a kind of coarſe hay, for winter-fodder for ſtore-cattle.

The common rental price of meadow-land is, from five ſhillings to ten ſhillings an acre; and, in their preſent ſtate, it is their full rental value; taking one year with another: in a very dry ſeaſon they are frequently, on a par, worth ten ſhillings an acre to a farmer; paſturage of any kind being, in that caſe, ſingularly valuable in Norfolk; but, in a common year, they are not, in their preſent ſtate, I apprehend, worth, on a par, more than ſeven ſhillings an acre.

If we conſider the natural ſituation, and the preſent ſtate of the Norfolk meadows, the following IMPROVEMENTS ſpontaneouſly offer themſelves.

1. DRAINING the ſurface and ſubſtratum from ſuperfluous moiſture.

2. CLEARING and LEVELLING the ſurface-mould, and increaſing its contexture and FIRMNESS.

3. Improving the QUALITY OF THE PRODUCE, by GRASS-SEEDS; or, by PLANTING.

4. In-

4. Increaſing the QUANTITY, as well as the quality of the herbage, by MANURING and WATERING.

The laſt, namely, WATERING, is a practice entirely unknown to the generality of Norfolk huſbandmen. Indeed, until the ſurface of their meadows be adjuſted, and the ſubterranean waters removed, a knowledge of the practice would be uſeleſs to them.

Without this advantage, great as it would be in addition, I will venture to aſſert, from an extraordinary attention to this ſubject, that the preſent rental value of the meadows of Eaſt-Norfolk might be doubled; and this at the expence of one-third of the improved value. I will venture to go farther, and give it as my clear opinion, that the meadow-lands of Eaſt-Norfolk, with a ſimilar proportion of expence, might, on a par, be improved ten ſhillings an acre.

We have, in a former ſection, eſtimated the number of arable acres in Norfolk, to be ſix hundred thouſand. Suppoſing the proportion of arable to meadow-land to be as twenty to one (ten to one would, perhaps, be a nearer proportion) the number of acres of meadow will be thirty thouſand, which, at ten ſhillings

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an acre, is fifteen thouſand pounds; from which take one-third for the expence of improvement, the remainder is ten thouſand pounds, the neat annual improvement.

If to the IMPROVEMENT of draining, &c. that of WATERING were added, in places where it is practicable, at a moderate expence, this annual increaſe might be very conſiderably augmented.

In a country where landed gentlemen are ſo minutely, and ſo ſtrenuouſly, attentive to their own intereſt, it is aſtoniſhing they do not ſet about ſuch *real* improvements as would, in the inſtant, render them reſpectable, and bring, in the end, a *durable* increaſe to their rent-rolls; rather than continue to dwell upon thoſe, which have already brought down ſo much diſtreſs upon their tenants, and obloquy upon themſelves.

However, with reſpect to the improvement of meadows, the tenants are equally culpable with their landlords: even a twenty-one year's leaſe is not enough to encourage them to make the requiſite improvement.

The fact is, the landlord and tenant are jointly intereſted; and the expence in this, as

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in almoſt all caſes of improvement upon a leaſed eſtate, ought to be joint. On granting a leaſe, the landlord ought to advance, or allow, ſome certain ſum of money towards the improvement; which he, or his agent, ought to ſee executed, according to agreement, previouſly entered into by the tenant.

III. Marshes. This ſpecies of natural graſsland is, on the eaſtern ſide of the county, confined to the neighbourhood of Yarmouth; where an extenſive tract of marſhes lie on the banks of the Breydon; which, formerly, was probably, an arm of the ſea, but is now a mere dilatation of the Yare; which, at Yarmouth, regains the river-form. This valuable tract of land, with its preſent ſtate and application, being fully deſcribed in Minute 118, it is unneceſſary to dwell upon it in this place.

IV. Fens. Under this head I claſs the ſwampy margins of the rivers and lakes which abound in the ſouthern part of this Diſtrict.

Their natural produce is reed, gladdon *, ſedge, ruſhes, and other aquatic and paluſtrean

* Gladdon—Typha *latifolia et anguſtifolia*,—cats-tail.

plants;

plants; their upper ſides being frequently out of the water's way, affording a proportion of grazable land: hence, probably, they are provincially termed "marſhes." This, however, is not only contrary to the common acceptation of the term; but the produce and principal uſe of a fen are totally different from thoſe of a grazing marſh.

The profits of a fen ariſe, in general, from

Reed and gladdon, cut for thatch, for buildings;

Sedge and ruſhes, for litter; and thatch, for hay and corn-ricks, and ſometimes for buildings;

Coarſe graſs, for fodder, and ſometimes for paſturage;—and

Peat for fuel *.

The *laſt*, if made the moſt of, is a very valuable article,—as appears in MIN. 54.

* The proprietors of manors are alſo proprietors of the fiſh in ſuch parts of thoſe freſh-water lakes as lie within their reſpective manors; and the right of fiſhing is frequently let off to men who make an employment of taking the pike (ſome of them of immenſe ſize) and other fiſh with which "the broads" abound.

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The uſe and value of REED have been ſpoken to, amply, under the head BUILDINGS AND REPAIRS.

GLADDON is of a ſimilar uſe, but leſs value; its duration being much ſhorter than that of reed.

The other articles require no explanation.

For an inſtance of burning *ant-hills*, ſee MIN. 6.

For an inſtance of a *grazing-ground* being more nutritious to heifers than to ſteers, ſee MIN. 39.

For the Norfolk method of *opening drains*, ſee MIN. 44.

For the method of "gelding" *ant-hills*, ſee MIN. 50.

For general obſervations on Norfolk *meadows*, ſee MIN. 51.

For general obſervations on *fens*, ſee MIN. 54.

For a ſtriking inſtance of the preſent bad management of *meadows*, ſee MIN. 65.

For the method of cutting *reed*, ſee MIN. 89.

For a ſtriking improvement of *meadow*-land, ſee MIN. 96.

For a deſcription of the *Yarmouth marſhes*, &c. ſee MIN. 118.

Beſides theſe Minutes on provincial practice, I find ſome relating to a ſpecies of graſsland, different from any of thoſe above-enumerated: namely, a young perennial lay; the herbage principally rye-graſs and white-clover; the ſoil a tolerably rich loam; the ſituation cooler than that of Norfolk arable land in general; but warmer than what is called meadow; forming a ſuite of dairy-grounds; which, lying round the houſe I reſided in, fell immediately under my own eye; and the management of them was frequently conducted under my own directions. See MIN. 108.

For inſtance of profit by *mowing the broken graſs* of paſtured land, ſee MIN. 7.

For an evidence of *ſheep* being inimical to *cows*, ſee MIN. 8.

For the effect of the *ſhovellings of a ſheepfold* upon graſsland, ſee MIN. 10.

For an experiment on the *time of manuring* graſsland, ſee MIN. 127.

36.

CATTLE.

IN TREATING of this ſpecies of live-ſtock, it will be proper to conſider, ſeparately,

1. The ſpecies, or breed.
2. Cows, and the management of the dairy.
3. Rearing cattle.
4. Bullocks, or fatting-cattle.

I. THE SPECIES. The preſent breed of cattle, in this Diſtrict, is not leſs peculiar to the country, than its breed of horſes was formerly (ſee HORSES), and is ſtrongly marked with the ſame leading characters.

The native cattle of Norfolk are a ſmall, hardy, thriving race; fatting as freely, and finiſhing as highly, at three years old, as cattle in general do at four or five.

They are ſmall-boned, — ſhort-legged, — round-barrelled, — well-loined, — thin-thighed, — clean-chapped; the head, in general, fine, and the horns clean, middle-ſized, and bent

upward: the favourite colour, a blood-red, with a white or a mottled face.

The breed of Norfolk is the Herefordſhire breed in miniature; except that the chine and the quarter of the Norfolk breed are more frequently deficient.

This, however, is not a general imperfection. I have ſeen Norfolk ſpayed heifers ſent to Smithfield, as well *laid up*, and as *full in their points*, as Galloway or Highland "Scots" uſually are; and, if the London butchers be judges of beef, there is no better *fleſhed* beaſts ſent to Smithfield-market.

Theſe two qualifications; namely, the ſuperior quality of their fleſh, and their fatting freely at an early age, do away every ſolid objection to their ſize and form. Nevertheleſs, it might be adviſeable to endeavour to improve the latter; provided thoſe two far ſuperior qualifications were not by that means injured. But it might be wrong to attempt to increaſe the former, which ſeems to be perfectly well adapted to the Norfolk ſoil.

The medium weight of a well-fatted three-year-old is forty ſtone (of fourteen pounds each).

Bulls

Bulls of the Suffolk polled breed have, at different times, been brought into this Diſtrict; and there are ſeveral inſtances of the Norfolk breed being croſſed with theſe bulls. —The conſequence is, an increaſe of ſize, and an improvement of form: but it is much to be feared, that the native hardineſs of the Norfolk breed, and their quality of fatting quickly, at an early age, are injured by this innovation; which was firſt introduced by gentlemen, who, it is probable, were unacquainted with the peculiar excellency of the true Norfolk ſtock; and the mongrel breed, which has ariſen from the croſs, yet remains in the hands of a few individuals.

A few years ago, a Highland Scotch bull was brought into this neighbourhood, by a man who ſtands high in the profeſſion of grazing; and who has croſſed his own ſtock, of the true Norfolk breed, with this bull. The produce of this croſs proves, that if the genuine breed can be improved, by any admixture of blood whatever, it is by that of the "Highland Scot." The chine is, by this croſs, obviouſly improved; and the hardineſs, as well as the fleſh, and proneneſs to fat *at a*

certain age, cannot receive injury from this admixture. The only thing to be feared from it is, that the ſtock will not fat ſo *early*, as will that of the genuine breed; and, if the opinion of the oldeſt, graveſt, and I had almoſt ſaid, the beſt farmer in the Diſtrict has any weight in this caſe, this evil effect is much to be apprehended: he is clear in that a "Scot" does not fat kindly even at *three* years old; much leſs at *two*; at which age many hundred head of cattle are annually fatted in this country.

The fact appears evidently to be, that the Norfolk huſbandmen are in poſſeſſion of a breed of cattle, admirably adapted to their ſoil, climature, and ſyſtem of management: and let them croſs with caution; leſt by mixing they adulterate; and, in the end, loſe, irretrievably, their preſent breed of cattle; as their forefathers, heretofore, loſt a valuable breed of horſes; the loſs of which can, now, be only lamented.

If, through the laudable ſpirit of improvement, attempts be made with *foreign* breeds, they ought to be made with caution. But, from what I have ſeen and know of the Norfolk

folk ſtock, and what I have ſince ſeen of the improvement of the breed of cattle, in other counties, it appears to me, evidently, that nothing more is wanted to improve the form of the preſent breed of cattle in Norfolk than a due attention to the breed itſelf.

While *ſuch* cows, and *ſuch* bulls, as I have ſometimes ſeen, are ſuffered to propagate their deformities, no wonder ſome valuable points ſhould be lowered. But if, in the reverſe of this unpardonable neglect, men of judgement and enterprize would make a proper ſelection; and would pay the ſame attention to the Norfolk breed as is paid to the long-horned breed, in the midland counties, and to the ſhort-horned, in the north of Yorkſhire;—every point might beyond a doubt be filled up, and the preſent valuable qualities be at the ſame time retained.

But the great cauſe of neglect in the breeding of cattle in Norfolk, is, that men of judgement and ſpirit rather chooſe to purchaſe of the Scotch drovers, or of their poor and induſtrious but leſs judicious neighbours, than to go themſelves through the tedious round of rearing. However, if we conſider the preſent univerſal ſcarcity of cattle (1786), and that the

Scotchmen, through recent improvements in their plan of huſbandry, are now enabled to fat a part of that ſtock, which formerly they drove wholly to the ſouthward; it ſeems highly probable that the Norfolk graziers will, henceforward, find their advantage in encreaſing, and improving, their own breed; and they may reſt aſſured, that he who firſt ſets about its improvement will have it in his power to keep the lead; and reap, of courſe, the higheſt advantage.

II. Cows.—The prime intention of keeping cows in this country is the rearing of young ſtock;—the produce of the dairy, unleſs in the neighbourhood of large towns, being a ſecondary object.

But the number of cows kept, even by the rearing-farmers, is few: eight or ten may be conſidered as a middling dairy of cows upon a middle-ſized farm;—I mean on the eaſt ſide of the county.

In Weſt-Norfolk, eſpecially on the marſh-land ſide towards Cambridgeſhire, large dairies of cows are kept, for the purpoſe of making butter; which is ſent weekly to London under the denomination of Cambridge butter.

This

This is a fortunate circumſtance to the Eaſt-Norfolk breeders, who draw an increaſe of rearing-calves from that quarter of the county: whoſe dairymen, in their turn, are benefited, in being by this means enabled to get riddance of their calves, at an early age; jobbers making it a buſineſs to transfer them from one ſide of the county to the other.

By this means, and by buying up the calves of cottagers, farmers, and gentlemen of the neighbourhood, who do not rear their own, an Eaſt-Norfolk breeder is able to rear a greater number of calves than the number of his cows amount to.

Ten or twelve calves may, perhaps, be conſidered as the medial number reared at preſent, on a farm of one hundred and fifty pounds to two hundred pounds a year.

In the neighbourhood of Norwich and Yarmouth, cow-keeping is frequently applied to the FATTING OF CALVES for the ped-markets (ſee MARKETS).

Alſo, in the neighbourhood of theſe and other towns, BUTTER becomes an object of ſale.

CHEESE

Cheese is likewiſe an article of the ped-market; where it is generally ſold in a crude recent ſtate; eſpecially in the ſpring and early part of the ſummer; when it is bought up at a few weeks, perhaps at a few days old, by the working-people; of whom at that ſeaſon of the year it is the principal food.

With reſpect to the management of the Norfolk dairy-women, and their ſkill in butter and cheeſe making, little can be ſaid which will redound to their credit. However, in extenuation, it may be ſaid, and with truth, that rank meadows, and new lays, in ſummer, and turneps in winter and ſpring, are ill calculated for producing the delicacies of the dairy: and it may be added, that where perfection cannot be hoped for, emulation loſes its effect. Beſides, cuſtom has been very kind in reconciling their countrymen to thoſe things which a ſtranger revolts at; ſo that they have, now, no motive for endeavouring to correct the rankneſs of their butter, or the rancidity of their cheeſe.

Nevertheleſs, in one thing they are extremely culpable: this is in ſuffering their cheeſes to be devoured, year after year, by a

ſpecies

ſpecies of maggot peculiar, perhaps, to this county, with every appearance of tameneſs and reſignation; as if they were conſcious of its being a judgment upon their evil management.

But even, in this caſe, cuſtom is friendly to them: for ſuch is the depravity of taſte, when led away imperceptibly by habit, that even the maggots themſelves are to ſome grateful.

This, however, is only a palliation of their crime; for, not unfrequently, the entire dairy, except the ordinary ſkim-cheeſe, is more or leſs affected; ſo that, before Michaelmas, the cheeſes would be literally ſo many bags of maggots, were they not ſold off, and conſumed, at an age, at which, in any other country, they would not be ranked among human food. I have myſelf ſeen a dairy of cheeſe—that is, the ſtock then left on hand—in total ruins before that time. An Eaſt-Norfolk cheeſe, ſound and whole at Chriſtmas, is a rarity; by Lady-day, there is not, generally ſpeaking, a pound of Norfolk cheeſe, nor even a handful of maggots, to be purchaſed in the Diſtrict.

I am

I am the leſs reſerved in my cenſures of the Norfolk dairy-women in this reſpect, as I know, from my own experience in the county, that the evil which is here ſpoken of, and which is a cauſe of great and unneceſſary hardſhip to the labouring poor, in the winter months, originates, principally, in a want of attention and management. But having in that caſe, as in others relating to my own experience, minuted the circumſtances, as they occurred, or as ſoon as a regular Minute could be formed of them, I ſhall not enlarge upon the ſubject, here, but refer to MINUTE 108.

III. REARING CATTLE.—This ſubject calls for a threefold diviſion.

1. Calves,
2. Yearlings,
3. Two-year-olds.

1. CALVES. The rearing of cattle is become, in my opinion, a ſubject of the firſt importance to this country: a univerſal and growing ſcarcity of neat ſtock is experienced, more or leſs, throughout the kingdom. I have therefore paid more than common attention to the rearing of calves (the firſt and moſt difficult

cult part of the buſineſs) in this Diſtrict: not only as being a primary object in the Eaſt-Norfolk ſyſtem, but becauſe the practice here is, in many reſpects, peculiar to the country.

The *number* has already been mentioned in general terms: it varies, however, with the quantity of meadow or other natural graſsland belonging to a given farm; and ſometimes, but not always, with the time at which the cows happen to come-in.

The time of rearing.—Some farmers "bring up" all the year round;—rearing every calf he has dropt. Others rear in winter, only; fatting his ſummer calves for the ped-markets; or, at a diſtance from them, for the butcher. Norfolk farmers, in general, begin early in winter to rear their calves: ſome ſo early as Michaelmas; in general, if their cows come in, before Chriſtmas: not only as being fully aware of the advantage of rearing early; but in order that they may rear as many of their own calves as poſſible; "drove calves" being always hazardous, and ſometimes ſcarce.

No diſtinction is made as to ſex: males and females are equally objects of rearing, and are both, occaſionally, ſubjected to caſtration; it being

being a prevailing cuſtom to ſpay all heifers intended to be fatted at three-year-old; but ſuch as are intended to be finiſhed at two-year-old are, I believe, pretty generally left "open:" as are, of courſe, ſuch as are intended for the dairy.

There are two reaſons for this practice: they are prevented from taking the bull too early, and thereby fruſtrating the main intention; and by this precaution they lie more quietly—are kept from roving—at the time of fatting. This may be one reaſon why ſpayed heifers are thought to fat more kindly at three-year-old, and to be better fleſhed, than open heifers.

The method of treatment remains now to be explained.—This depends in ſome meaſure on the time of rearing: the winter calves require more milk than the later-dropt ones do.

The general treatment of a calf dropt at Chriſtmas may be ſaid to be this: ſucks, twice a day, the firſt fortnight: has the pail, twice a day, for the next month or ſix weeks: and once a day, for a month or ſix weeks longer:—with hay in a rack, and *turneps* in a manger; and, ſometimes, with oats and bran among the

the turneps: which laſt, after a calf has taken freely to them, ſerves as both meat and drink.

In this conſiſts the chief peculiarity of the Norfolk method of rearing calves: which may be ſaid to be with milk and turneps: the laſt a ſpecies of food, which, in every other part of the kingdom, is, I believe, entirely neglected, or unthought of.

As ſoon as the weather gets warm enough, the calves are turned out, in the day, among the fatting bullocks, or on to a patch of turneps, or upon a piece of wheat, or a forward graſs-piece, and houſed again at night: until, the days growing long, and the nights warm, and the clover and darnel have riſen to a full bite, they are turned out altogether; and continue to have the firſt bite of every thing, which is good and palatable to them, throughout the ſummer.

This, as beforementioned, may be called the general treatment of calves dropt at Chriſtmas; but as the managements of no two farmers are exactly the ſame, I made it my buſineſs to attend to the practice of individuals; and as the reſult of my obſervations appear in MINUTES 53, and 70, I ſhall refer the reader to

thoſe

thoſe Minutes for further particulars on the ſubject.

2. YEARLINGS. The lattermath and ſtubbles being finiſhed, the yearlings—provincially "buds,"—are put to turneps: either as followers to the bullocks; or have ſome freſh turneps thrown to them: in either caſe, they ſleep in the par-yard, and generally have a ſeparate par allotted them; though ſometimes they are parred with the two-year-olds.

In the yard, the beſt of the "ſtover" is allowed them, and, perhaps, a little ordinary hay: it being a maxim, pretty generally adopted among good farmers, to keep their young ſtock as well as they can the firſt winter.

In ſpring, and ſummer, they follow the bullocks, and run in the meadows; or, if theſe be wanting, are ſometimes ſent out to ſummer graſs in the marſhes or grazing-grounds. For the agiſtment price, ſee the LIST OF RATES.

3. TWO-YEAR-OLDS. Run in the ſtubbles and broken graſs till Chriſtmas, or until turneps can be ſpared them; when they generally follow the bullocks. In winter, they are always

always "parred" at night; ſometimes with the cows; ſometimes with the buds; ſometimes alone. Good farmers generally keep them ſeparate:—if parred with the buds, they rob them; if with the cows, they are liable to be "horned," and are never at reſt: except while the cows are eating up the beſt of the fodder.

Some farmers, when turneps run ſhort, "put out" their two-year-olds in winter: and others, when they are plentiful, "graze," that is, fat their two-year olds.

In general, however, they are "kept over-year," on meadows or lays, or are ſent to the marſhes or grazing-grounds, as ſituations and circumſtances point out; and, at Michaelmas, are put to turneps as fatting-cattle.

The agiſtment price for two-year-olds, from May-day to Michaelmas, varies with the keep. See LIST OF RATES. For further particulars ſee the MINUTES referred to below.

IV. BULLOCKS *.—This is the grand object to which every part of the Norfolk huſbandry more

* "Bullocks."—This is a general term, in Norfolk, for all kinds of cattle at turneps, or other food, with an intention

more or leſs tends, and which diſtinguiſhes it, and has long diſtinguiſhed it, from the huſbandry of all other countries.

The practice of fatting bullocks on turneps is, however, now beginning to creep into every part of the kingdom: but it may be ſaid to be ſtill in a ſtate of infancy every where, except in Norfolk; and an accurate account of the practice of this parent-county cannot fail of being uſeful to every other turnep-land Diſtrict.

Impreſſed with this idea, I ſpared no pains, nor let ſlip any opportunity, of making myſelf acquainted with the ſubject. The reſult of my obſervations and enquiries I regiſtered as they occurred, and appear in the MINUTES. All, therefore, that remains to be done in this place, is to make a general analyſis of the ſub-

tention of being fatted; whether they be oxen, ſteers, heifers, or cows. A ſimple general term is much wanted in this caſe; and, although the term bullocks may not be entirely free from objection, I ſhall, in this place, adopt it. Dr. Johnſon defines it "a young bull;" but the moſt general acceptation of it, at preſent, is—"an aged ox." Upon the whole its meaning is vague, and it may without much impropriety, be applied to fatting and fatted cattle.

ject,

ject; and to delineate its outline, ſo as to place it in a regular and clear light; and thereby prepare the reader to go through the Minutes with the greater eaſe and advantage.

The four grand diviſions of the ſubject are,

1. The ſpecies of bullocks fatted.
2. The method of obtaining them.
3. The method of fatting them.
4. The method of diſpoſing of them.

1. SPECIES.—The only ſpecies of cattle fatted in Eaſt-Norfolk may be ſaid to be "home-breds" and "Scots." Some "Iriſh beaſts" have, at different times, but not regularly, been brought into the country, and have generally done very well. In Weſt-Norfolk, great numbers of Lincolnſhire and Yorkſhire oxen were formerly, and ſome few, I believe, are now, fatted; but in this Diſtrict they have always been conſidered as much inferior to the Scotch and home-bred ſtock.

HOME-BREDS conſiſt of

Steers,
Spayed heifers,
Open heifers,
Barren cows,
"Running calves."

The laſt is a ſpecies of fatting-cattle peculiar, perhaps, to this country. They are calves, which are ſuffered to run with their dams until they be a twelvemonth or more old: the cow being all the while at "head-keep," of which the calf partakes, as well as of the milk of its dam: which, herſelf, in the mean time, generally gets fat enough to be ſent to Smithfield, with her calf (perhaps, as heavy as herſelf) by her ſide.

The SCOTCH CATTLE fatted in Norfolk conſiſt of

"Galloway Scots;" other
"Lowland Scots;"
"Highlanders;"
"Iſle of Skys."

The Galloway Scot is large, thick, ſhort-legged, moſtly hornleſs, and of a black or brindled colour: the fleſh well grained; and the form altogether beautiful:—chine full;—back broad and level;—quarter long and full at the nache; round barrel;—deep girt;—and the bone, head, and chap, in general, fine.

This I apprehend is the genuine original Galloway Scot; and a principal part of the bullocks brought into Norfolk under that name

are

are of this deſcription:—but the droves are generally adulterated with a mongrel ſort;—the produce of a croſs with the long-horned breed.

This ſpecies of adultery is ſaid to be committed and encouraged by the nobility and landed gentlemen of the countries they are bred in; but the fact appears to be, that they have already one of the fineſt breed of cattle in the world upon their eſtates; and it behoves them to hand it down to poſterity as pure at leaſt as they received it. In this age of improvement, it might be laudable to endeavour to improve it to the utmoſt: not, however, by foreign admixtures; but by giving the moſt beautiful females to the moſt beautiful males of their own breed. They appear to me to have much to loſe, but nothing to gain, from croſſing,—not even with the preſent long-horned breed of the midland counties.

This ſpecies of Scotch cattle appears to be originally of the county of Galloway, which forms the ſouthern extremity of Scotland; but they are now, it is ſaid, propagated in other

parts of the Lowlands, eſpecially in the rich-land counties of Lothian, in the neighbourhood of Edinburgh. I have known them fatted to eighty ſtone; and have been informed, from authority which I have no reaſon to doubt, that they have been known to reach near one hundred ſtone (of fourteen pounds each).

Lowland Scots. The ordinary breed of *black cattle*, in the Lowland counties, are a ſize below the Galloways,—and appear to be a mixture between theſe and the Highland Scots. Sixty ſtone is a good weight for a Lowland Scot. His form and inclination to fat partake of the Galloway breed: the former, however, is ſeldom ſo near perfection as is that of a true Galloway Scot. Lowland Scots are ſome of them horned, ſome of them polled; their colour black, or brindled, or dun.

Highland Scots. This ſeems to be a diſtinct breed. The ſize is beneath that of the Lowland Scot: forty to fifty ſtone is the ordinary weight of a Highland Scot. In form, fleſh, and fatting quality, the "Highlanders" reſemble much the Galloway Scots; except that their backs in general are coarſer, their bone proportionably

portionably larger, and in that they have, in general, but not always, horns,—of the middle ſize, and moſtly bent upward,—like thoſe of the Welſh cattle—but finer.

In general appearance there is a ſtrong reſemblance (their horns apart) between the Highland Scots and the black cattle of North-Wales; but with reſpect to fleſh and fatting quality,—the main objects,—the compariſon is greatly in favour of the Scotch breed; which the gentlemen of North-Wales are ſaid to fetch annually out of Scotland, or to buy them up at the Engliſh fairs, to be fatted for their own tables.

The Iſle of Skys appear to be only a *variety* of the Highland breed; contracted by ſoil, or climature, or both. They are, in point of ſize, the loweſt in the gradation. But with regard to fleſh, fatting, and growth while fatting, they may be ſaid to ſtand foremoſt. I have known an Iſle of Sky Scot, bought at two years and a half old for leſs than forty ſhillings, reach, in about twenty months, to forty-five ſtone *.

At that age their "growth" in England is aſtoniſhing; owing, perhaps, not more to

* But this was the head bullock of a lot of half a ſcore, and is, perhaps, a ſingular inſtance.

their nature, than to a change of climature, and a change of food. Much, however, depends upon their age. If they be intended for immediate fatting, four years old is the propereſt age. An Iſle of Sky or a Highland Scot at two or three years old will grow, but he will not fat; at five or ſix he will fat, but he will not grow, while fatting, equal to a four-year-old bullock. At this age the weight of Iſle of Sky Scots, when *fat*, varies, from twenty to forty ſtone.

Theſe are the four *ſpecies*, or *varieties*, of cattle which are brought by the Scotch drovers to the Norfolk fairs, and which are bought up and fatted by the Norfolk farmers, under the foregoing names. There may be other breeds, and admixtures of cattle, propagated in Scotland; but not being ſent to this market, they are foreign to the preſent ſubject.

2. THE METHOD OF OBTAINING BULLOCKS for fatting.—This is either by

Rearing, or by

Purchaſe.

Some farmers rear all their own fatting-ſtock: others purchaſe the whole. But the more general practice is to rear part, and buy in part.

Much

Much depends upon ſituation; but more, perhaps, upon judgement: and ſtill more, perhaps, upon an ample and regular ſupply of the *means* of purchaſe.—It is allowed that the affluent fortunes, which were formerly made by ſome few Norfolk farmers, were chiefly acquired through a ſuperior ſkill in the purchaſe of ſtock; ſeconded by a full ſupply of money; by which means they were always able to time their purchaſe to the beſt advantage. But in men of inferior judgement, and who have not money at their command to purchaſe when the price of ſtock is low, it is undoubtedly prudent to rear the whole, or a principal part, of their own ſtock; for, in doing this, they travel a beaten track, and tread on ſure ground.

The purchaſe of homebreds is chiefly at the fairs;—or at the breeders houſes; or on the "cattle hill" at Norwich, where there is a weekly market;—ſometimes pretty full of different ſorts of live ſtock.

The purchaſe of Scots is, in this Diſtrict, chiefly at the fair of St. Faith's, a village near Norwich; to which the Scotch drovers bring annually great numbers.—See MIN. 27. and 134.

Theſe

Theſe Scotch dealers have a ſucceſſion of fairs, which keep them ſome months in the country; during which time a continued ſtream of cattle is kept flowing from its various ſources in Scotland to its general efflux: which is judiciouſly removed from place to place, that the diffuſion may be the more regular and eaſy.

The ſale begins the 9th of September, at *Harleſton*, in South-Norfolk; where its ſtay is about a fortnight. From Harleſton it moves on to *Wolfpit*, in Suffolk; and returns to *Seching*, near Lynn in Norfolk, the 10th of October. From Seche it is removed to *St. Faith's* (its grand ſtation) near Norwich, the 17th of October. Its ſtay, here, is uncertain: a fortnight, or three weeks, or as long as the demand laſts. There is a fair at *Haleſworth*, a few miles within Suffolk, the beginning of November; but this ſeldom, I believe, cloſes altogether St. Faith's fair. The 22d of November it recommences in Norfolk at *Hempton-Green*, in the northern part of Weſt-Norfolk: where continuing a week, or longer time, it is finally removed to *Hoxone*, on the borders of Suffolk, the beginning of December;

ber; and there continues open until near Chriſtmas.

Eaſt-Norfolk, as obſerved above, is principally ſupplied at St. Faith's. The northern Hundreds ſometimes draw an additional ſupply from Hempton-Green; and the ſouthern ones from Haleſworth and Hoxone; which, with the other fair in Suffolk, lie within the reach of the Norfolk farmers.

The Highlanders and Iſle-of-Skys are chiefly or wholly oxen; but the Galloway, and other Lowland Scots have a mixture of ſpayed heifers; a ſpecies of fatting-cattle which is covetted by judicious graziers.

The moſt common age is four years old; but many of the Scotch cattle brought to theſe fairs are probably much older: ſome of them have been worked: even ſome of the "Highlanders" are ſaid to be worked at the collieries. There are alſo many three-year-olds, and ſome two years old or under. Theſe are bought to be kept "over-year" in the meadows, marſhes, and grazing-grounds.

For the ſame purpoſe, two-year-old home-breds are alſo purchaſed, the firſt day of theſe and at other fairs.

But,

But, for immediate fatting, the deſired ages are three years old for homebreds, and four years old for Scots.

3. THE METHOD OF FATTING.—This has been already ſpoken to in deſcribing the application of TURNEPS; to which the reader is referred; as well as to the MINUTES mentioned at the cloſe of this article, for individual practice. It will nevertheleſs be proper in this place to take a general view of the ſubject; thereby endeavouring to place it in a light as perſpicuous as may be. The firſt thing to be conſidered is,

The *proportion* of bullocks to a given quantity of turneps. This depends on the ſize of the bullock, and the quality of the turneps. The general calculation is a middle-ſized bullock to an acre of good turneps. Taking turneps on a par, a fatting-bullock and a follower come, perhaps, nearer the real proportion.

The *time* depends on the growth of the turneps and the poſſeſſion of the bullocks: the homebreds are uſually put to turneps about Michaelmas: the Scots as ſoon as they are purchaſed. It is obſervable, here, that notwithſtanding a Scotch bullock, eſpecially of the

the ſmaller kind, never ſaw, perhaps, a turnep; yet, when thrown to abroad, in company with two or three homebreds, he generally ſoon learns to break his turneps. Some particular bullocks, however, will receive a check before they take to them.

The *place* for fatting bullocks on turneps is either

The field,
The yard,
Sheds, or hovels.

The firſt requires leaſt attendance and attention, and is highly beneficial to light land: the ſecond makes a great quantity of manure, but a waſte of ſtover: the laſt requires leſs litter; but incurs a greater portion of labour.

In a dry, open ſeaſon, bullocks at turneps do beſt abroad: in wet, pinching weather, beſt under cover.

Out of theſe eſtabliſhed facts ariſes an obviouſly eligible plan of management, where circumſtances will admit of it. In autumn, ſo long as the weather continues moderate, let bullocks remain abroad; but, whenever it ſets in very wet, or very ſevere, take them up under cover;—and there let them remain until

until they be finiſhed; or until the warmth of ſpring calls them abroad again.

But the moſt eligible method of fatting depends on a variety of circumſtances:

The ſoil and ſituation;

The conveniencies in the yard;

The ſeaſon; and

The ſpecies of ſtock to be fatted.

Cattle which have been accuſtomed to lie abroad in a ſevere climate, will ſtand the winter in the field better than thoſe which have been uſed to a ſheltered yard, in a warmer climate.

No general plan of management can, therefore, be laid down. All that can be done is, to point out the various modes in uſe, and leave every man to conſider well his own particular circumſtances, and make his election accordingly.

4. THE MARKETS FOR BULLOCKS. The conſumption is divided between the metropolis and the county. The proportion I never heard gueſſed at. Perhaps three-fourths, perhaps no more than two-thirds, of the bullocks fatted in Norfolk, are ſent to the London market.

Norfolk

Norfolk is a populous county; not more through the Norwich manufactory, which diffuſes itſelf over a principal part of it, than from the circumſtance of Norfolk being an arable country.

The *places* of ſale are,

Smithfield;
St. Ives *;
The fairs; and
The farmer's yard.

Bullocks for the London market are chiefly ſent directly to Smithfield: many, however, go by the way of St. Ives; and ſome few are bought up in the country by the London dealers.

Thoſe ſent to London and St. Ives are put under the care of drovers, and generally ſold by the ſaleſmen of the reſpective markets. Some farmers follow their bullocks to theſe markets; and ſometimes, but very ſeldom, ſtand the market themſelves.

The advantage of ſending bullocks by the way of St. Ives is, that if that market prove a bad one, they are driven on to Stevenage; and if this does not ſuit, are driven through to the

* St. Ives, in Huntingdonſhire.

London

London market. But while they are thus driven from place to place, they are not only accumulating expences, but are ſhrinking in carcaſe. From the north-weſt quarter of the county conſiderable numbers of bullocks are, I believe, driven to St. Ives, and there is one drover from the northern part of this diſtrict.

But the grand market for bullocks fatted in Eaſt-Norfolk is Smithfield: to which, in the ſeaſon, they are driven weekly, or twice a week; according to the ſupply, and the ſtages of the ſeaſon.

Smith of Erpingham has long been the common drover of *this* Diſtrict. He generally begins, about Candlemas, to go once a fortnight: in the latter part of February, and the month of March, once a week: in April, May, and June, generally twice a week: and in Auguſt or September, he uſually makes one or two journies to take off the ſurplus of the home conſumption, and the "harveſt beef," fatted in the marſhes, grazing-grounds, and lays, during the courſe of the ſummer.

His place of rendezvous is St. Faith's; where, or in his road to it, the farmers meet him with their reſpective lots.

For

For the Monday's market, he ſets out from St. Faith's on Sunday, and reaches London the Sunday following. The diſtance one hundred and twelve miles.

At Mile-End he is met by the ſaleſmen; who mark, and take, from that time, the charge of the lots which are reſpectively conſigned to them. Sometimes the choice of a ſaleſman may be left to the drover; but, in general, every farmer has his own ſaleſman.

If the owners of the bullocks do not attend the market themſelves, it is the drover's duty to ſee (were it poſſible) that juſtice be done to his employers; and to receive the neat proceeds from the ſaleſmen; who deliver accounts in this form:

——"Three Tuns, Smithfield.

Seven beaſts ſold for Mr. —— the 10th day of June 1782.

1	Waterman	-	14	0	0	Selling (at 1s. 6d.)	0 10 6
1	Beeton	-	13	0	0	Toll & expences	0 2 1
1	Andrews	-	12	10	0	Help - - -	0 1 9
1	Sewell	-	12	0	0	Graſs - - -	0 0 0
1	Alexander	-	12	0	0	Drover, J. Smith,	1 15 0
1	Brown	-	12	0	0	Paid yourſelf -	86 0 8
1	Brown	-	13	0	0		
7			£88	10	0		£88 10 0

(Signed) S—l P—n,
Beaſt and ſheep ſaleſman."

The expences are, and have been for many years, invariably the ſame; namely, ſeven ſhillings and a penny half-penny a bullock,—great or ſmall; unleſs when very large heavy bullocks are ſent off, a day or two before the drove, as they ſometimes are to eaſe them on their journey; in which caſe the expence of the drift is ſomewhat more.

Theſe accounts, which are payable at the faleſmen's bankers, are delivered to the owners of the bullocks, if they attend; if not, to the drover; who formerly brought down the whole amount in money; but now, principally, in bills, at a ſhort date, upon the Norwich bankers.

The drover's place of payment in this neighbourhood is North-Walſham; the firſt market-day after the ſale. The farmers go to his Inn, where their accounts and caſh are ready for them. See MIN. 117.

MINUTES ON BREED.

For an inſtance of the excellency of the *Iſle-of-Sky-Scots*, ſee MIN. 40.

For an opinion comparative between the *Scotch* and the *Norfolk* breeds, ſee MIN. 69.

For

For an evidence in favour of the *Suffolk* breed, ſee MIN. 69.

For an opinion that a *three-year-old Norfolk* will fat as kindly as a *four-year-old Scot*, ſee MIN. 72.

For an inſtance highly in favour of the *Iriſh* breed, ſee MIN. 110.

For an inſtance of the excellency of the *Norfolk* breed, ſee MIN. 119.

MINUTES ON GENERAL MANAGEMENT.

For an inſtance of a grazing-ground being more friendly to heifers than to ſteers, ſee MIN. 39.

For reflections on the rearing of cattle, ſee MIN. 53.

For obſervations on the practice of diſtributing rubbing-poſts in paſtured and teathed incloſures, ſee MIN. 66.

For an inſtance of the number and ſpecies of cattle kept on a middle-ſized farm, ſee MIN. 70.

For general obſervations on the winter management of ſtore-cattle, ſee MIN. 74.

Minutes on cows and the dairy.

For inſtances of ſheep being unfriendly to cows, ſee Min. 8.

For an opinion that turneps are an excellent food for cows in the ſpring, ſee Min. 83.

For general obſervations on cheeſe-making, ſee Min. 108.

For general obſervations on making butter, ſee Min. 109.

Minutes on rearing cattle.

For an evidence that young ſtock will pay for good keep, ſee Min. 46.

For a method of rearing calves, ſee Min. 53.

For an evil effect of not ſpaying heifers clean, ſee Min. 69.

For various methods of rearing calves, ſee Min. 70.

For obſervations on the winter-management of young ſtock, ſee Min. 74.

Minutes on bullocks.

Species.

For the comparative value of different *breeds* of cattle for fatting, ſee Minutes on breed, above referred to.

For

For obſervations on fatting the Norfolk breed at one-year-old, as "running calves," ſee MIN. 69.

For reflections on fatting them at two-years-old, ſee MIN. 112.

Buying.

For an account of the Scotch bullock-fair of St. Faith's, ſee MIN. 27. and 134.

For an inſtance of buying the Norfolk breed at Holt fair, ſee MIN. 39.

For general obſervations on buying bullocks, ſee MIN. 110.

For further information on this ſubject, ſee MIN. 113.

Fatting.

For a ſingular circumſtance of the grazing-grounds of Foulſham being more nutritious to heifers than to ſteers, ſee MIN. 39.

For an incident on the fatting of Iſle-of-Sky Scots with great ſucceſs, ſee MIN. 40.

For an incident on the quantity of turneps eaten, and the proceſs of fatting bullocks *in the yard*, ſee MIN. 56.

For an incident on the proportion of bullocks to turneps *in the field*, ſee MIN. 57.

For obſervations on ſhed and out-door bullocks, ſee MIN. 69.

For various inſtances of individual practice, ſee MIN. 69.

For a method of curing ſufflation, ſee MIN. 72.

For the manner in which bullocks break their turneps, ſee MIN. 84.

For obſervations on ſhed and out-door bullocks, in ſevere weather, ſee MIN. 93.

For an incident of practice particularly attended to, ſee MIN. 97.

For further obſervations on this incident, ſee MIN. 102.

For ſome account of the Fleg grazing, ſee MIN. 106.

For further obſervations on the abovementioned incident of practice, ſee MIN. 110.

For a further progreſs in the ſame incident, ſee MIN. 111.

For an inſtance of bullocks doing well at graſs, though the weather was wet, ſee MIN. 113.

For ſome account of grazing in Blowfield Hundred, and in the Yarmouth marſhes, ſee MIN. 118.

Selling

Selling.

For an inſtance of ſale at Smithfield, ſee MIN. 102.

For an account of Walſham bullock-fair, ſee MIN. 105.

For an account of Worſtead bullock-fair, ſee MIN. 107.

For another inſtance of ſale, and the uncertainty of Smithfield-market, ſee MIN. 111.

For an account of Ingham bullock-fair, ſee MIN. 112.

Obſervations on a lot ſent off to Smithfield, ſee MIN. 113.

For the drover's method of paying the farmers: with obſervations on that lot, ſee MIN. 117.

Profit.

For an inſtance of great profit by the Iſle-of-Sky Scots, ſee MIN. 40.

For calculations of profit, from the quantity of turneps eaten in the yard, ſee MIN. 56.

For a calculation on the quantity eaten in the field, ſee MIN. 57.

For an inſtance of low profit by Scots, ſee MIN. 102.

For ſundry inſtances of great profit by Scots and Iriſh cattle, ſee MIN. 110.

For an evidence that profit depends chiefly on management, ſee MIN. 110.

For another inſtance of moderate profit by Scots, ſee MIN. 111.

For an inſtance of great profit by home-breds, ſee MIN. 119.

It may be proper to obſerve, that the inſtances of *profit*, which are here adduced, are, taken collectively, much above par. If, in a common year, a bullock, of forty ſtone, pay half a crown a week for fatting, he is thought to have done tolerably well. Suppoſing him to take ſix months "time;" and, in that time, to eat an acre of turneps; the groſs produce, on this calculation, will be three pounds five ſhillings; from which deduct fifteen ſhillings for ſtraw and attendance, the remainder is fifty ſhillings for the neat produce of the turneps;—excluſive of the value of the teathe, or the dung, ariſing from the conſumption.

But it being evident (at leaſt to my mind) that very much depends upon management, I am clearly of opinion, that, by a judicious attention to breeding, or a proper choice in purchaſing;—by laying-out farms conveniently,

ly, and adapting the mode of fatting to the given ſoil and ſituation;—by finiſhing the bullocks highly, and conducting the ſale judiciouſly, the preſent par price of two ſhillings and ſixpence a week, for a bullock of forty ſtone, might be raiſed without extraordinary exertion, to three ſhillings or three ſhillings and ſixpence a week:—and, conſequently, the neat par produce of an acre of turneps, on the above calculation, to three pounds, or three pounds ten ſhillings an acre. To this muſt be added the TEATHE, which, upon the lighter lands, is one of the main ſupports of the Norfolk ſyſtem of hubandry.

37. SHEEP.

37.

SHEEP.

NO CIRCUMSTANCE in the Norfolk husbandry surprized me more than that of finding the country in a manner destitute of sheep.

In one of my journies to Gunton, I purposely rode, on horseback, through the center of the county — by Thetford, Watton, Dereham, Reepham, &c. in order that I might catch a general idea of its rural economy.

From the nature of the soil, and from the prevalence of the turnep-husbandry, I had conceived it to be the land of sheep: but from the time I crossed the river at Thetford, until I arrived within a few miles of the end of my journey, *I did not see one sheep!*

In the north-west quarter of the county, considerable flocks are kept: but in the eastern and southern divisions the number kept, in the summer months, is trifling; except upon commons, or about the residences of gentlemen: and, except upon some few capital farms,

farms, upon which over-year flocks are kept. But Eaſt-Norfolk farms, in general, are, in the months of July, Auguſt, and September, as free from ſheep as elephants;—except, perhaps, ſome few kept on until harveſt for, what is called, "harveſt-beef;" namely, to be killed for the work-people in harveſt.

In and round the park of Gunton, a conſiderable flock was kept; and it is chiefly from obſervations on this flock, that I gained my information reſpecting the Norfolk breed of ſheep.

The BREED of Norfolk horſes was not formerly, nor its breed of cattle at preſent, more ſingular than is its BREED OF SHEEP; which, it is highly probable, has long been preſerved in purity;—I mean without adventitious mixture of blood.

There are two *varieties* of this SPECIES of ſheep: the one larger (weighing from fifteen to twenty-five pounds a quarter) which is the common ſtock of the county:—the other ſmaller (from ten to fifteen pounds a quarter), which are bred chiefly upon the heaths in the neighbourhood of Brandon and Methwold, in the ſouth-weſt quarter of the county. Theſe go by

by the name of "heath-ſheep;" but differ in no reſpect from the common ſort; except in that of their being ſmaller, and in that of their wool being finer.

The characteriſtics of a Norfolk ſheep are theſe:

The carcaſe long and ſlender.

The fleece ſhort and fine.

The legs long, and black, or mottled.

The face black, or mottled.

The horns—of the ewes and wedders, middle-ſized, and ſomewhat ſtraight; reſembling thoſe of the Dorſetſhire ewes, ſo well known, now, in different parts of the kingdom, as the mothers of houſe-lamb;—but thoſe of the rams are very large, long, and ſpiral, like the horns of the Wiltſhire ram.

The loin of a Norfolk ſheep, of the beſt mould, is wide, and the hind-quarters ſufficiently large for the general make; but the fore-quarters, in general, are very deficient. The ſhoulders low, the back aukwardly high, and the chine ſharp, and unſightly.

This is, at leaſt, too generally the caſe; I have, however, ſeen ſome of them with tolerable backs; and I am confidently of opinion, that

that if the Norfolk breeders of ſheep would pay leſs attention to their "countenances" (that is, the colour of their faces) and more to their carcaſes, the preſent breed, viewed in a general light, might be very highly improved: not, however, by the introduction of ſtrange breeds, and unnatural croſſings; but by a judicious choice of the males and females of their own breed;—which, taken all in all, even at preſent, appears to be ſingularly well adapted to the ſoil and ſyſtem of management prevalent in this country.

They may be bred, and will thrive, upon heath and barren ſheep-walks, where nine-tenths of the breeds in the kingdom would ſtarve: they ſtand the fold perfectly well: fat freely at two years old: bear the drift, remarkably well, to Smithfield, or other diſtant markets; and the ſuperior flavor of the Norfolk mutton is univerſally acknowledged.

Therefore, the Norfolk huſbandman, in their ſheep, as well as in their cattle, have much to loſe: and the almoſt only thing they have to gain is a better chine; which, with a judicious attention to their own breed, might be-

yond

yond a doubt be obtained, without hazarding any of their preſent advantages.

The long-wooled breeds of Lincolnſhire, Huntingdonſhire, and Leiceſterſhire, have of late been attempted to be introduced, by gentlemen, in different parts of the county; and mongrels have been reared from a mixture of the two breeds: but neither the country, nor the gentlemen themſelves, are likely at preſent, to gain either advantage or credit from their experiments: ſaving that praiſe which is due to every experimentaliſt in agriculture.

It is far from being my intention to check the laudable ſpirit of experimenting; but in this, as in almoſt every other caſe, I wiſh that it ſhould be conducted with caution: a valuable breed of ſtock, adapted to a given ſoil and ſituation, is an acquiſition of ages; but let their ſuperior excellencies be what they may, a few years are ſufficient to loſe them, perhaps, irretrievably.

I am an admirer of the preſent beautiful breed of Leiceſterſhire ſheep; which, as to form, are undoubtedly ſuperior to any other breed in the kingdom, and are admirably adapted to the ſoil and ſituation they are bred in;

in; as well as to every other rich incloſed graſs-land country; and conſequently may not be unfit for the paddocks of gentlemen in this or any other country; nor, perhaps, altogether improper for the *Eaſt*-Norfolk farmers, who keep only a few ſheep, for the purpoſes above-mentioned. But, taken in a general light, as a breed for the county at large, they appear to me to be wholly unfit.—*I believe* they will not live upon the heaths, and open, extenſive, unproductive ſheep-walks of Weſt-Norfolk, ſo well as the preſent breed of heath-ſheep of that country: *I know* they will not ſtand the fold ſo well, nor travel ſo well to the London market, nor ſell for ſo much by the pound when they arrive there, as will the preſent breed of Norfolk ſheep in general; which, aukward in form as they undoubtedly are at preſent, appear to me, from a knowledge of different breeds, to be better adapted to the ſoil, ſituation and ſyſtem of management of the county at large, than any other breed at preſent exiſting in the Iſland.

THE GENERAL ECONOMY or ſyſtem of management of ſheep in this country is mentioned in MIN. 122, on the ſheep-ſhow of Cawſton; in

in which alſo the particular practice of this Diſtrict is ſo far pointed out as relates to the lambs and crones bought at that fair; which with thoſe of Kenninghall and Kipping, alſo held in the ſummer months, form the grand communication between the two ſides of the county.

If a farmer do not lay in his intended ſtock at theſe fairs, he buys hoggards at the ſpring fairs; letting them run in the fallows, lays, and ſtubbles until autumn; and finiſhing them with turneps the enſuing winter.

For the method of fatting them on TURNEPS, ſee that article.

For the admeaſurement of a *ſheep-fold*, ſee MIN. 1.

For an evidence of ſheep being *inimical to cows*, ſee MIN. 8.

For an inſtance of advantage of *ſheep-fold* to barley, ſee MIN. 11.

For an experiment and obſervations on the *time* of putting the *ram* to the ewes, ſee MIN. 17.

For an experiment with *ſheep-fold* for wheat, ſee MIN. 18.

For

For an incident of *ſheep-fold* checking the turnep-fly, ſee MIN. 21.

For an evidence that different *breeds* of ſheep affect different ſpecies of *food*, ſee MIN. 75.

For obſervations on *ewes lambing*, ſee MIN. 76.

For an inſtance of the effect of good keep on young *lambs*, ſee MIN. 78.

For an incident on *croſſing* Leiceſterſhire ewes with a Norfolk ram, ſee MIN. 82.

For an inſtance of *prolificknes* in the Norfolk breed of ſheep, ſee MIN. 86.

For an inſtance of *cutting ridgil*-lambs, ſee MIN. 99.

For a further evidence of an almoſt total privation of ſheep in Eaſt-Norfolk, ſee MIN. 106.

For obſervations on *Cawſton ſheep-ſhow*, ſee MIN. 123.

38.

RABBITS.

THE SOIL of this county, viewed at large, might be termed a rabbit-ſoil; and it is highly probable that, before its preſent ſyſtem of huſbandry took place, a conſiderable part of it was occupied by this ſpecies of live ſtock.

At preſent, however, they are, in this Diſtrict, wiſely confined to the heathlets, and the barren hills upon the coaſt. A level country is unfit for rabbit-warrens, but convenient for the plow: on the contrary, rabbits delight in the ſides of ſandy hills; which, where turn-wriſt plows are not in uſe, are extremely inconvenient for tillage; and, when cultivated, are generally unproductive.

The rabbit, on level ground, finds it difficult to make its burrow; the excavated mould is all to be dragged *upward* to the ſurface: hence a piece of ground, altogether level, can ſeldom be ſtocked ſucceſsfully with rabbits; unleſs

unleſs it be firſt laid up, by art, at a great expence, into inequalities.

On the contrary, againſt the ſide of a ſteep hill, the rabbit has no difficulty to encounter: the declivity affords him a ready vent for his mould; his work is all *down-hill*: and—unleſs the ſoil be too ſtubborn, or too rocky, for the rabbits to work freely among,—a broken hilly country may generally be ſtocked with advantage; provided a tolerable market for the carcaſes can be had within reach.

There are, perhaps, few ſandy or other *looſe-ſoiled hills*, which would not pay better in rabbit-warren than under any other courſe of huſbandry.

For an inſtance of an improvement by converting unproductive ſandy hills into rabbit-warrens, ſee MIN. 79.

39.

SWINE.

THE NUMBER of ſwine reared and fatted in Norfolk is very conſiderable: the dairy in ſummer, the ſtubbles in autumn, and the barns and ſtables in winter, furniſh a conſtant ſupply of ſuſtenance; while the great quantities of buck raiſed in this country furniſhes an ample ſource of fatting.

In Norfolk, however, as in other Diſtricts, farmers differ widely about the proper number to be kept, upon a given farm, under given circumſtances. It may nevertheleſs be ſaid that, in general, they are fully aware that a moderate number well-done-to, are more profitable, in the end, than a greater number badly kept;—yet there are ſome few men, even in Norfolk, whoſe half-ſtarved herds are nuiſances to the neighbourhoods they are kept in; without affording either pleaſure, or extraordinary profit, to their reſpective owners.

The

The ſpecies of ſwine, which formerly was univerſal throughout the country, is, like the ſheep, a ſlender long-legged animal; but, like thoſe, is of quick growth, and prone to fat at an early age: I have ſeen them, at ſix months old, near three quarters grown, and as fat as pigs in general are, at nine or twelve. Their ſize is not large: fifteen to twenty ſtone (fourteen pounds) is a good weight for a fat well-grown hog.

But the "old original ſort" is now nearly loſt; the Chineſe and Berkſhire breeds have of late been introduced; ſo that, at preſent, Norfolk exhibits the ſame motley mixture of breeds, which may be ſeen in almoſt every other county in the kingdom.

Farmers in general rear their own pigs: keeping, according to the ſize of their farms, one or more ſows, which in general are fatted young, *and ſpayed before they be fatted:* through which means their fleſh is thought to be much improved.

They are fatted almoſt univerſally on buck; which is ſometimes cruſhed, and ſometimes given to them whole. It is a quick good fat-

ting; ſomewhat ſimilar to barley; not ſo good as peas.

The conſumption lies principally with the county: ſome few, but I believe no great number, are ſent to the London market.

They are in general killed as porkers,—and either carried to the ped-market, or pickled for family-uſe: not put down in tubs, for keeping, in the ſouth-of-England manner; but only immerged in brine, for preſent uſe; and in this manner are continued to be temporarily preſerved, from time to time, throughout the year; a ſpecies of houſhold management I have not met with elſewhere.

For a ſingular inſtance of fatting hogs looſe in a yard, ſee MIN. 52.

41. POULTRY.

40.

POULTRY.

NORFOLK is celebrated, and juſtly, for its TURKIES. The ſpecies is large; their fleſh, nevertheleſs, fine; and the number reared greater than that produced in any other Diſtrict of equal extent; owing, perhaps, to one circumſtance. It is underſtood, in general, that, to rear turkies with ſucceſs, it is neceſſary that a male bird ſhould be kept upon the ſpot, for the ſame purpoſe that a gander, a drake, or a male fowl is kept; namely, to impregnate the eggs individually. This deters not only cottagers, who are afraid of the expence of keeping a gluttonous turkey-cock the year round, but many farmers, who diſlike the noiſe and troubleſomeneſs of theſe animals, from breeding turkies. But the good houſewives of this country know that a daily intercourſe is unneceſſary; and that, if the hen be ſent to a neighbouring cock previous to the ſeaſon of excluſion, one act of impregnation is ſufficient

for one brood. Thus relieved from the expence and diſagreeableneſs of keeping a male bird, moſt little farmers, and many cottagers, rear turkies. This accounts for the number: and the ſpecies, and the food they are fatted with (which, I believe, is wholly buck) account for their ſuperior ſize and quality.

With reſpect to GEESE, DUCKS and FOWLS of this country, nothing is noticeable; except that they are, in general, below the common ſize, and that it is a practice to put young goſlings upon green wheat: a piece of houſewifery which perhaps is peculiar to the country.

Poultry of every ſpecies are ſold, in the markets, ready picked and ſkewered fit for the ſpit; and are, in general, ſo well fatted, and dreſſed up in ſuch neatneſs and delicacy, as ſhew the Norfolk-houſewives to be miſtreſſes in the art of managing poultry.

41. DECOYS.

41.

DECOYS.

THE LAKES, and large pools, which abound in the ſouthern Hundreds of Eaſt-Norfolk, are the nurſeries of innumerable flights of wild-fowl, of various ſpecies, but principally ducks; which are taken in great numbers in decoys, formed on the margins of theſe waters; and which, in eligible ſituations, may well be conſidered as objects of rural economy.

Much judgment is requiſite in forming and managing a decoy. A gentleman in this neighbourhood had a perſon out of Lincolnſhire to make one for him. But, after a great expence of cutting pipes, fixing ſkreens, nets, &c. it proved unſucceſsful. The pipes were too ſtraight, too cloſe and confined, and too narrow at the mouth; without any banks for the wild fowl to baſk upon. Upon the whole, it was too much *like* a trap to be taken,

The leading principles of a decoy are theſe.

The

The wild-duck is a very ſhy bird, and delights in retirement. The firſt ſtep, therefore, is to endeavour to make the given water a peaceful aſylum, by ſuffering the ducks to reſt on it undiſturbed. The ſame love of concealment leads them to be partial to waters whoſe margins abound with underwood and aquatic plants: hence, if the given water is not already furniſhed with theſe appendages, they muſt be provided; for it is not retirement, alone, which leads them into theſe receſſes, but a ſearch after food, alſo.

Nevertheleſs, at certain times of the day, when wild-fowl are off their feed, they are equally delighted with a ſmooth, graſſy margin, to adjuſt and oil their plumage upon. On the cloſe-paſtured margins of large waters frequented by wild-fowl, hundreds may be ſeen amuſing themſelves in this way: and, perhaps, nothing draws them ſooner to a water than a conveniency of this kind:—hence it becomes eſſentially neceſſary to ſucceſs to provide a graſſy, ſhelving, ſmooth-ſhaven bank at the mouth of the pipe, in order to draw the fowl, not only to the water at large, but to the deſired part of it.

Having,

Having, by theſe means, allured them to the mouth of the pipe, or canal, leading from the water to a tunnel net, fixed at the head of it; but hid from the ſight, among trees and aquatic plants;—the difficulties now remaining are thoſe of getting them off the bank into the water, without taking wing; and of leading them up the pipe to the ſnare which is ſet for them.

To get them off the bank into the water, a dog (the more he is like a fox the better) ſteals from behind a ſkreen of reeds, which is placed by the ſide of the pipe to hide the decoyman, as well as his dog, until the ſignal be given. On ſeeing the dog, the ducks ruſh into the water; where the *wild-fowl* conſider themſelves as ſafe from the enemy which had aſſailed them.

But among the wild-fowl, a parcel (perhaps, eight or ten) of *decoy-ducks* have mixed, and were,-probably, inſtrumental in bringing them, with greater confidence, on to the bank. As ſoon as theſe are in the water, they make for the pipe; at the head of which they have been conſtantly fed; and in which they have always found an aſylum from the dog. The

wild-

wild-ducks follow; while the dog keeps driving behind; and, by that means, takes off their attention from the trap they are entering.

As ſoon as the decoyman, who is all the while obſerving the operation through peep-holes in the reed-ſkreen, ſees the entire ſhoal under a canopy net, which covers and incloſes the upper part of the pipe, he ſhews himſelf; when the wild-fowl inſtantly take wing; but their wings meeting with an impervious net, inſtead of a natural canopy formed of reeds and bullruſhes, they fall again into the water, and, being afraid to recede, the man being cloſe behind them, puſh forward into the tail of the tunnel-net which terminates the pipe *.

This being the uſe of the pipe, its form becomes obvious. It ought to reſemble the outlet of a natural brook, or, a natural inlet or creek of the principal water. The mouth ought to be ſpacious, and free from confine-

* I was told by the proprietor of a decoy, who is himſelf fond of the diverſion, and whoſe veracity I have no reaſon to doubt, that he has, in this way, caught "nine dozen at a puſh."

ment,

ment, that the wild-fowl, on their firſt ruſhing into the water, and while they have yet the power of recollection, may be induced to begin to follow the tame ducks; and for the ſame purpoſe it ought to be crooked, that its inward narrowneſs, and nets, may not, in the firſt inſtance, be perceived. The lower part of a French horn is conſidered as the beſt form of the pipe of a decoy.

One material circumſtance remains yet to be explained. It is the invariable nature of wild-fowl to take wing with their heads toward the wind; and it is always imprudent to attempt to take them in a decoy, unleſs the wind blow down the pipe: for, while their enemy is to leeward of them, they have leſs ſcruple to go up the pipe, making ſure of an eſcape by their wings: but what is of ſtill more conſequence, if the wind ſet up the pipe, when they take wing under the canopy net, ſome of them would probably eſcape (a circumſtance always to be dreaded), and thoſe which fell again into the water would fall, of courſe, with their heads toward the wind, and would, with greater difficulty, be driven into the tunnel.

This

This circumſtance is ſo well known, by decoymen in general, that every decoy is, when circumſtances will admit of it, furniſhed with three or four different pipes, pointing to diſtinct quarters of the horizon, that no opportunity may be loſt on account of the wind.

42. BEES.

42.

BEES.

A CONSIDERABLE quantity of honey is collected in Norfolk; but, in general, it is of an inferior quality: owing, as it is generally believed, to the quantity of buck which is annually grown in this country, and which is highly grateful to bees; affording them an ample ſupply of honey.

It does not, however, appear clear to me, that the inferior quality of the Norfolk honey is owing to its being collected from this plant. It reſembles, in colour and ſmell, the honey of the north of England, collected from the heaths, moors, and fells, which abound in that part of the iſland: and it appears to me probable, that the brownneſs and rankneſs of the Norfolk honey is owing to the ſame cauſe; namely, heath;—which not only abounds on the little heathy waſtes, which occur in almoſt every part of the county; but ſeems to be a natural production of the ſoil in general;

fre-

frequently riſing, even in good ſoil, on ditch-banks, and other uncultivated places; ſo that the evil, if not wholly, is, in part, occaſioned by the heath; which, it is a notorious fact, affords much honey, but of a bad quality.

I will not, however, infer from this, that buck is productive of fine honey, and that it has no ſhare in the debaſement of the Norfolk honey. The flowers of buck have no doubt a *powerful*, *luſcious* ſmell, which is *diſagreeable* to many people; but are not thoſe of beans equally powerful, equally luſcious, and to ſome perſons equally diſagreeable? I only wiſh that the evil effect of buck upon the quality of honey, may be *doubted*, until it be *proved*, by accurate experiments.

For an inſtance of a depopulated hive being taken poſſeſſion of by a new colony, ſee MIN. 126.

LIST

LIST

OF

RATES AND PROPORTIONS

IN

NORFOLK.

THE MOTIVE for forming a regiſter of rates and proportions was, principally, my own practice. A man who ſits down to practiſe in a Diſtrict whoſe cuſtoms he is a ſtranger to, has many difficulties to encounter. An ignorance of the current prices of materials, labour, and produce, is not one of the leaſt; and he finds it expedient to make himſelf acquainted with theſe particulars, as ſoon as poſſible.

My motive for endeavouring to perfect the liſt, and for publiſhing it, is three-fold. Firſt, it will be a proper, and, in ſome meaſure, a neceſſary, appendage to the preſent volumes. Second, it may be a guide to the inexperienced: A gentleman, or any man, who undertakes the management of an eſtate, or a farm, without having been regularly initiated in the employment, ſtands, in his own country, in a ſituation ſimilar to that which a practitioner finds himſelf in, when he firſt enters a freſh Diſtrict: and the preſent liſt may not be found uſeful to the inexperienced in Norfolk, only; but may ſerve, in ſome meaſure, as a guide to thoſe in other counties: for although the prices of labour and produce vary in every Diſtrict; yet an authentic regiſter of thoſe of any *one*, may ſerve to leſſen the number of impoſitions which gentlemen are liable to, on their firſt entrance into the field of practice. And, laſtly, a *collection* of regiſters of rates of labour, in different and diſtant Diſtricts, will not only be a ſtill better guide to the beginner; but may be found uſeful to practitioners in general; in aſſiſting them to regulate their reſpective liſts of prices.

The

The particulars which I collected in Norfolk fall, aptly, under the following heads.

I. BRICKLAYERS WORK.
   1. Materials.
   2. Labour.
   3. Proportions.

II. CARPENTERS WORK.
   1. Materials.
   2. Labourers.

III. THATCHERS WORK.
   1. Materials.
   2. Labourers.
   3. Proportions.

IV. WOODLANDS AND HEDGES.
   1. Produce.
   2. Labour.

V. HUSBANDRY.
   1. Yearly-ſervants.
   2. Day-labourers.
   3. Road team-work.
   4. Soil-proceſs.
   5. Manure-proceſs.
   6. Seed-proceſs.
   7. Vegetating-proceſs.
   8. Harveſt-proceſs.
   9. Barn-management.
   10. Markets.
   11. Graſsland.

I. BRICKLAYERS WORK.

1. Materials.

Common red bricks *, 15 to 16*s.* a thouſand.

Hard-burned, 16 to 17*s.* a thouſand.

Stone-coloured, 21 to 23*s.* a thouſand.

Flooring-bricks, 9 inches ſquare, 8*s.* a hundred.

———————— 12 inches ſquare, 18*s.* a hundred.

———————— 18 inches ſquare, 50*s.* a hundred.

Common pan-tiles, 50*s.* a thouſand.

Glazed pan-tiles, 90*s.* a thouſand.

Plane-tiles, 16*s.* a thouſand.

Ridge-tiles, 80*s.* a thouſand.

Pipe-drain bricks, 14 to 18*s.* a hundred.

"Dreeps"—offset bricks, 20*s.* a thouſand.

"Lumps"—barn-floor bricks, 30*s.* a thouſand.

——— large ditto, 50*s.* a thouſand.

Old bricks (half-bricks, half-bats), 12*s.* a thouſand.

Old foundation-blocks (rough maſſes of brick and lime cemented together), 2*s.* 6*d.* a load.

* Gage,—nine inches long; four inches and a quarter wide; and two inches and one-eighth thick.

Caſting

Caſting and carting the clay, and making and burning bricks, 7*s.* a thouſand.

——— pantiles, 30*s.* a thouſand.

Taking down brick walls, and cleaning the bricks, 2*s.* 6*d.* a thouſand; reckoning two bats for one brick.

Cleaning looſe bricks, 2*s.* a thouſand.

Price of ſea-ſtones, 1*s.* to 1*s.* 6*d.* a load.

Pulling down old ſea-ſtone walls, and clearing and ſorting the ſtones, 5*s.* a ſquare ſtatute rod (namely, about 30 ſquare yards).

Lime, 9*s.* to 10*s.* 3*d.* a chaldron (of 32 buſhels).

Caſting and carting marl and burning it into lime, 18*d.* and beer, or 20*d.* a chaldron.

One chaldron of coals (36 buſhels) burn 7 chaldron of lime (32 buſhels).

Clay 1*s.* a load,

Hair, 1*s.* to 14*d.* a buſhel.

Sap laths, 14*d.* a bundle.

Pantile laths, 7*s.* a bundle.

2. Labour.

Journeymen's wages, 20*d.* and beer, or 1*s.* 1 1*d.* a day.

Labourer's wages, 1*s.* and beer, or 1*s.* 3*d.* a day.

Laying bricks, 10*d.* a ſquare yard, (of 14 inch work; that is, one and a half brick thick).

Foundation, 1*s.* (the ſame thickneſs).

Labour and lime, 20*d.* a yard.

Laying pan-tiles on inter-laths and mortar, 4*s.* a ſquare (of 100 ſquare feet).

Plaiſtering, 2*d.* a ſquare yard.

Ceiling, 4*d.* a ſquare yard.

Rendering (that is, one coat of plaiſtering) between ſpars, 1*d.* halfpenny a yard.

Laying brick floors in mortar, 3*d.* a yard.

Laying barn-floors with clay, 4*d.* halfpenny to 6*d.* a yard.

Laying hay-chamber-floors with ditto, 4*d.* halfpenny to 6*d.* *.

Daubing on ſtudwork, 4*d.* halfpenny a yard.

Stopping and plaiſtering old daubing, 1*d.* a yard.

3. Proportions.

A ſquare yard of 9 inch work (that is, a brick in length thick) takes about one hundred and twenty bricks (the gage ſmall).

One chaldron of Norfolk lime will lay about two thouſand bricks.

* Tempering the clay and dreſſing the floor included.

One

One load of ſea-ſtones will pave about ten ſquare yards.

One load of clay will lay (in the Norfolk manner) about eight ſquare yards of barn-floor.

II. CARPENTERS WORK.

1. Materials.

Oak timber as it ſtands, 3*l.* 3*s.* to 4*l.* a load (of forty feet).

Ditto in the ſtick, 50*s.* to 60*s.* a load.

Aſh as it ſtands, 40*s.* to 50*s.* a load of 44 feet; allowing 4 feet for bark.

Ditto, in the ſtick, 30*s.* to 40*s.* a load of 44 feet.

Poplar, as it ſtands, 30*s.* to 40*s.* a load of 44 feet.

Alder, as it ſtands, 20*s.* to 30*s.* a load of 44 feet.

2. Labour.

Journeyman-carpenter's wages, 18*d.* and beer, or 21*d.* a day.

A foreman-carpenter's wages, 2*s.* and beer, or 2*s.* 3*d.* a day.

A joiner's wages, 2*s.* 3*d.* and beer, or 2*s.* 6*d.* a day.

III. THATCHERS WORK.

1. Materials.

Reed, 3*l.* to 3*l.* 3*s.* a hundred fathom (of 6 feet).

Cutting and binding reed, 25*s.* a hundred.

Cutting and binding gladdon, 30*s.* a hundred.

Taking off old reed and binding it, 10*s.* a hundred.

New "tar-rope" (three ſtrands), 3*s.* 6*d.* to 4*s.* a ſtone (of fourteen pounds).

2. Labour.

Day's work of a man and boy, 2*s.* 6*d.*

Laying reed, a halfpenny a foot; or, 4*s.* 2*d.* a ſquare.

Laying ſtraw, the ſame.

Setting on "roofing," 3*d.* to 4*d.* a foot in length.

3. Proportions.

A hundred of reed covers five ſquare:

A load of ſtraw about two ſquare.

A ſquare of reed takes about five pounds of tar-rope.

A load of ſtraw will make about 25 feet of "roofing."

IV.

IV. WOODLANDS AND HEDGES.

1. PRODUCE.

For prices of timber, ſee CARPENTERS WORK.

Oak bark, 10*s.* to 12*s.* each load of timber.

Top-wood, 8*s.* to 10*s.* each load of timber.

Round wood, (the naked boughs) 12*s.* to 15*s.* a waggon-load *.

Bakers faggots, 15*s.* to 18*s.* a hundred (of one hundred and twenty).

Spray faggots, 12*s.* to 14*s.* a hundred (of one hundred and twenty).

"Buſhel blocks †"—10*s.* a load (of forty blocks).

2. LABOUR.

"Grub-felling ‡" timber from 1*s.* to 18*d.* a load of timber, together with the "ground-firing;" that is, the roots.

* A full waggon-load of round-wood piled up rough (not cut into lengths) meaſured on a par, nine feet long, four and a half feet wide, and four and a half feet high.

† Rough firing blocks cleft out of decayed pollards, roots, or other offal wood; each block being *ſuppoſed* to be the ſize of a buſhel.

‡ Partially grubbing.—See PLANTING.

Cutting

Cutting off the round-wood, 1*s.* a load.

Tying wood-faggots, 2*s.* 6*s.* to 3*s.* a hundred (of ſix ſcore).

Tying furze-faggots, 2*s.* to 2*s.* 6*d.* a hundred (of ſix ſcore).

Riving buſhel blocks, 4*s.* a load.

Riving half-buſhel blocks, 5*s.* to 6*s.* a load (of eighty blocks).

Riving half-buſhel from ſhort ends, when little ſawing is wanted, 4*s.* a load.

Riving ſmall billet, 1*d.* a ſcore.

Riving plaiſtering-laths, 6*d.* a bundle.

Tolerably good white-thorn layer, at 4*s.* a thouſand.

Oaken layer, three or four years old, to lay into hedges, 1*s.* a hundred.

Gathering haws, 8*d.* a buſhel.

Gathering acorns, 1*s.* a buſhel.

Gathering aſh-keys, 6*d.* a buſhel, heaped and preſſed down *.

Double-digging two ſpits and a crumb, 1*s.* a ſquare rod (of ſeven yards).

Price of furze-ſeed, 15*d.* a pound.

* Theſe prices vary of courſe with the plenty or ſcarcity of the different articles in a given year. The above are low prices.

Making

Making a new ſix-foot ditch, planting quick, and ſetting a hedge, 1*s.* and beer, or 14*d.* a rod (of ſeven yards).

Re-making an old ditch, ſcouring, facing, backing, and ſetting a hedge, 7*d.* to 10*d.* and beer.

Cutting thorns, 1*s.* a waggon-load.

Backing and hedging, 5*d.* a rod.

Backing without hedging, 3*d.* a rod.

Grubbing up hedges and borders, 6*d.* to 1*s.* a rod and the "ſmall firing," that is, the chips and ſmaller roots. See p. 112.

V. HUSBANDRY.

1. YEARLY-SERVANTS.

Yearly wages of a head man, 8 to 10*l.*

Yearly wages of a ſecond man, 4 to 6*l.*

Yearly wages of a harrow-boy, 40*s.*

Yearly wages of a woman, 3*l.* to 3*l.* 3*s.*

Yearly wages of a girl, 30 to 40*s.*

2. DAY-LABOURERS.

Day-wages of a common man *, in winter, 1*s.* and beer.

Day-wages of a common man, in ſummer, 1*s.* 1*d.* and beer.

* A teamer man is allowed 1*s.* a week extra, for "horſe money."

Harveſt-

Harveſt-wages, 35 to 40*s.* and board during harveſt, whether it be ſhort or long.

Day-wages of a woman, 6*d.* and beer, and in harveſt alſo board.

3. Road Team-work.

Five horſes, one man and waggon, 10*s.* a day*.

Teamer-man's road-allowance, 6*d.* a day's journey.

4. Soil-process.

Plowing,—whether it be breaking up a fallow or ſtirring it, 2*s.* 6*d.* an acre for man and horſes.

Seed-plowing (eſpecially for wheat in narrow ridges) ſeldom done by the acre.

5. Manure-process.

Caſting marl, 3*d.* to 6*d.* a load †.

* Inſtance of four horſes one man and two waggons in hay time, for 7*s.* 6*d.* a day.

† One individual gives 4*d.* in leiſure-times, and 6*d.* in turnep-hoeing, a load for caſting; beſides the uncallowing, which he pays for extra by the day. One man and big boy fill twelve loads a day; the team (five horſes one man) carrying that number a ſhort diſtance. Total expence about 18*d.* a load.

Another gives 3*d.* to 4*d.* for caſting (beſides uncallowing). A team carries ſix loads about half a mile. One man fills by the day.

Filling

Filling marl, 2*d.* a load.

Spreading marl, 9*d.* to 1*s.* an acre.

"Outholling" (ſcouring out the rich mould from the bottoms of ditches), 1*d.* to 2*d.* a rod (of ſeven yards).

"Turning up borders," (that is, digging up the top-ſoil, and laying it in a ridge with the graſs-ſide downward) 1*d.* a rod, for a yard wide, if free from roots or other obſtructions.

Filling mould,—generally done by the day.

Turning up muck in the yard,—by the lump.

Turning muck-heaps, 1*d.* a load.

Filling muck, 1*d.* a load.

Spreading muck, 8*d.* to 10*d.* an acre.

6. SEED-PROCESS.

Wheat, generally ſown by the day.

Barley, &c. 2*d.* an acre.

Turneps, 2*d.* an acre.

Clover and rye-graſs (mixed), 2*d.* an acre.

7. VEGETATING-PROCESS.

Hoeing turneps,—firſt hoeing, 3*s.* 6*d.* to 4*s.*—ſecond hoeing, 2*s.* to 2*s.* 6*d.*—the two hoeings, 6*s.* an acre, and beer.

Weeding, 6*d.* and beer; or 6*d.* to 5*s.* an acre.

Stone-picking, 2*d.* an acre.

8.

8. Harvest-process.

Mowing clover and rye-graſs, 1*s.* to 18*d.* an acre and beer.

Mowing *graſs*, 18*d.* to 21*d.* an acre, and beer.

Sweeping broken graſs in paſtures, &c. about 1*s.* an acre.

Reaping wheat, 5 to 6 or 7*s.* an acre.

Mowing barley, &c. 1*s.* an acre.

Drag-raking, 2*d.* an acre.

Thatching ricks, 8*d.* a ſquare; or more commonly 6*d.* a yard, in length, for both ſides, whether the roof be deep or ſhallow.

9. Barn-labour.

Thraſhing wheat, about 1*s.* a coomb, and beer.

Thraſhing barley, oats, and buck, 6*d.* to 8*d.* a coomb, and beer.

Thraſhing peas, 9*d.* a coomb, and beer.

Thraſhing clover-ſeed, 6*s.* a buſhel.

Sifting cleaned corn, 1*d.* a coomb.

Skreening and putting up ſuch corn, 6*d.* a laſt.

Cutting chaff, 18*d.* to 20*d.* a ſcore; or 18*d.* a day and board! (the machine in uſe a bad one.)

10.

10. Markets.

The Norfolk buſhel, eight and a quarter gallons.

Eighteen ſtone a coomb, of four buſhels, is eſteemed a good weight for wheat: twenty ſtone has been produced; that is, ſixty-three to ſeventy pounds a buſhel, of eight and a quarter gallons; or about ſixty-one to ſixty-eight Wincheſter.

11. Grassland.

Agiſtment price for the ſummer; namely, from May-day to Michaelmas; in marſhes or grazing-ground, at head-keep;—

For two-year-olds and ſmall Scots, 30*s.* to 35*s.*

For yearlings, 18*s.* to 21*s.*

Agiſtment price for the ſummer; in meadows, or at ſecond graſs;—

For two-year-olds, 18*s.* to 20*s.*

For yearlings, 10*s.* to 12*s.*

Agiſtment-price, by the week, in ſummer;

For bullocks, at head-graſs, 2*s.*

For ſheep, at head-graſs, 3*d.*

Agiſtment

Agiſtment price, by the week, after Michaelmas;

For fatting cattle, at head, 1*s.* 6*d.*

For two-year-olds, dry cows, &c. at ſecond graſs, 1*s.*

For yearlings, at ſecond graſs, 8*d.*

For ſheep, 2*d.*

Cutting open drains in moory meadows, three feet wide, 2*d.* to 4*d.* a rod (of ſeven yards), and beer.

Scouring ſuch drains annually, a halfpenny a rod.

Scouring main drains (five or ſix feet wide) annually, 1*d.* a rod.

Scouring main drains the ſecond year, 2*d.* a rod.

Scouring main drains the third year, 3*d.* a rod.

END OF THE FIRST VOLUME.